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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1985

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

SECOND SESSION

PART 1—Budget Overview (Pages 1-634)

Department of the Army
Department of the Air Force
Department of the Navy
Research, Development and Acquisition

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CONTENTS

THURSDAY, FEBRUARY 9, 1984

Page

Department of the Army: Overview of Army budget request 1

Chief of Staff, U.S. Army 113

TUESDAY, FEBRUARY 28, 1984

Department of the Air Force: Overview of Air Force budget request 281

TUESDAY, MARCH 6, 1984

Department of the Navy: Overview of Navy budget request 357

TUESDAY, MARCH 13, 1984

Under Secretary of Defense for Research and Engineering: Overview of research, development, and acquisition activities 541

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1985

THURSDAY, FEBRUARY 9, 1984

U.S. Senate,
Subcommittee of the Committee on Appropriations,
Washington, D.C.

The subcommittee met at 9 a.m., in room SD-138, Dirksen Senate Office Building, Hon. Ted Stevens (chairman) presiding.

Present: Senators Stevens, Andrews, Kasten, Rudman, Stennis, and Proxmire.

DEPARTMENT OF DEFENSE

Department of the Army

STATEMENT OF HON. JOHN O. MARSH, JR., SECRETARY OF THE ARMY

OVERVIEW OF ARMY BUDGET REQUEST

BUDGET AND OUTLAYS

Senator **Stevens**. Good morning.

This is the time scheduled to conduct an overview of the Army's budget request for the 1985 fiscal year.

That request totals $77.9 billion in budget authority, or an increase of 25 percent over supplemented 1983 funding levels.

Total outlays are estimated at $69.8 billion, including military construction, and that is 25 percent over 1984. This works out to a real growth approaching 19 percent in both budget authority and outlays.

The budget authority within the jurisdiction of this subcommittee totals $74.5 billion, up some $14.6 billion from last year.

COMPARATIVE TABLE ON BUDGET AUTHORITY AND OUTLAYS

We will ask the Army to supply a comparative table of budget authority and outlays within the jurisdiction of this subcommittee for the 1983 through 1985 fiscal years, to be inserted in the record at this point.

[The table follows:]

ARMY (DEFENSE APPN) SUMMARY
($ IN BILLIONS)

	FISCAL YEARS			1984/1985
CURRENT DOLLARS*	1983	1984	1985	REAL GROWTH
TOTAL OBLIGATIONAL AUTHORITY (TOA)	55.5	60.1	74.4	–
BUDGET AUTHORITY (BA)	55.4	59.8	74.1	–
OUTLAYS	49.7	53.8	67.2	–
CONSTANT FY 85 DOLLARS*				
TOTAL OBLIGATIONAL AUTHORITY (TOA)	60.5	62.9	74.4	9.4%
BUDGET AUTHORITY (BA)	60.4	62.6	74.1	9.4%
OUTLAYS	54.0	56.4	67.2	9.3%

* Less MILCON and Family Housing Appropriations

** Real Growth Excludes Military Retired Pay Accrual

ARMY BUDGET SUMMARY

($ IN BILLIONS)

CURRENT DOLLARS	FISCAL YEARS 1983	1984	1985	1984/1985 REAL GROWTH
TOTAL OBLIGATIONAL AUTHORITY (TOA)	57.6	62.6	77.9	–
BUDGET AUTHORITY (BA)	57.5	62.3	77.6	–
OUTLAYS	51.5	55.8	69.8	–
CONSTANT FY 85 DOLLARS				
TOTAL OBLIGATIONAL AUTHORITY (TOA)	62.8	65.5	77.9	10.2%
BUDGET AUTHORITY (BA)	62.7	65.3	77.6	10.2%
OUTLAYS	56.0	58.5	69.8	9.7%

* Real Growth Excludes Military Retired Pay Accrual

INTRODUCTION OF WITNESSES

Senator **Stevens**. Secretary Marsh, Jack, it is nice to have you back before the subcommittee again.

We also welcome General Wickham. This is your first appearance before this subcommittee as Chief of Staff of the Army.

General Wickham has a long and distinguished military career, including recent command of our forces in Korea. He also brings to the Army his extensive experience in the Office of the Joint Chiefs of Staff and the Department of Defense.

JOINT PREPARED STATEMENT AND BIOGRAPHICAL SKETCH

We will place his biographical sketch in the record at this point. As a matter of fact, let us put in the record your complete statements as though read. Then you can highlight and make any comments you want concerning those statements as you proceed.

Are there any opening statements?

Senator **Proxmire**. I have an opening statement, Mr. Chairman. I have to leave in 15 minutes. I have some questions which I would appreciate if I could submit them for the record.

Senator **Stevens**. The submitted questions will be received and printed at the conclusion of the hearing together with other submitted questions from members.

[The statement and biographical sketch follow:]

JOINT PREPARED STATEMENT

BY

THE HONORABLE JOHN O. MARSH, JR.
SECRETARY OF THE ARMY

AND

GENERAL JOHN A. WICKHAM, JR.
CHIEF OF STAFF, UNITED STATES ARMY
DEPARTMENT OF THE ARMY

PREFACE

The 1985 Army Posture Statement provides a description of the Army of Excellence of today and a prescription for the Army of tomorrow.

The excellence that we are striving to achieve and maintain responds to the challenges of a turbulent, violence-prone world where only military strength and the will to use it can deter conflict or defend our national interests, if deterrence fails. An environment of strategic nuclear balance has markedly increased the importance of landpower to deterrence of war. Concommitantly, this places an increased burden of responsibility on the Army to provide forces capable of responding in the national interest across the spectrum of warfare.

Today's Army is stronger and better equipped to perform that mission than at any time in its recent history. The balanced force of Active, Reserve and civilian components provides the necessary resources to meet the wide range of contingencies for which we must prepare. Army members believe in the preeminence of their mission and daily make those sacrifices necessary to preserve the security of our Nation. In return, we must provide them sufficient means to continue their efforts and programs to build the Army of tomorrow.

We are at a critical juncture today. The progress that we have made in recent years reflects the support and cooperation of Congress. Continued support will be essential to meet the manning, training, modernization and logistics challenges of the future Army of Excellence.

SECTION I: INTRODUCTION - A Commitment to Excellence

> "Excellence is the standard by which we measure the Army's performance. Excellence is not accidental. It is the result of conscious, intelligent effort and dedicated leadership."
>
> - GENERAL HAROLD K. JOHNSON
> Chief of Staff, U. S. Army
> 1964-1968

AN ARMY DEPLOYED

Today's American soldiers serve proudly in more than 30 countries around the world and throughout the United States.

These deployed forces, backed by strong, ready Reserves in the United States, are the cornerstone of our deterrent posture. The presence of U.S. landpower overseas provides credibility to our commitment to defend friends and allies of the free world. At critical outposts, four divisions in Europe are indispensable in maintaining the longest period of peace in modern European history, while the division in Korea has provided the backbone of our deterrent effort in this war-threatened land. The logistics and support infrastructures in place to support these divisions in time of war convince our allies, and their enemies, that the United States has both the capability and will to fight, if necessary.

Beyond these major force deployments, U.S. Army personnel serve in security assistance programs designed to help U.S. allies and friendly na-

ACTIVE ARMY COMBAT UNITS

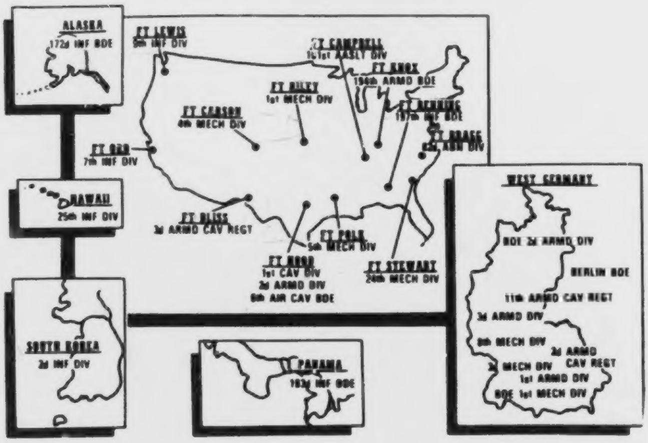

ALASKA
172d INF BDE
FT LEWIS
9th INF DIV
FT CAMPBELL
101st AASLT DIV
FT KNOX
194th ARMD BDE
FT RILEY
1st MECH DIV
FT CARSON
4th MECH DIV
FT BENNING
197th INF BDE
FT BRAGG
82d ABN DIV
FT ORD
7th INF DIV
HAWAII
25th INF DIV
FT BLISS
3d ARMD CAV REGT
FT POLK
5th MECH DIV
FT HOOD
1st CAV DIV
2d ARMD DIV
6th AIR CAV BDE
FT STEWART
24th MECH DIV
WEST GERMANY
BDE 2d ARMD DIV
BERLIN BDE
11th ARMD CAV REGT
3d ARMD DIV
8th MECH DIV
2d ARMD CAV REGT
3d MECH DIV
1st ARMD DIV
BDE 1st MECH DIV
SOUTH KOREA
2d INF DIV
PANAMA
193d INF BDE

TABLE 1.1

tions worldwide. In the Sinai, one infantry battalion and a contingency of logistics personnel provide a significant portion of the Multinational Force and Observers (MFO) monitoring the peace between Egypt and Israel. U.S. Army countermortar radar crews are assisting the Marines in Lebanon. Our training teams in El Salvador, deployment and training exercises in Central America and Egypt, and 150 mobile training teams aound the world demonstrate our commitment to preserving peace.

In Grenada, under intense combat conditions, Army Rangers and Paratroopers responded rapidly and decisively to Presidential direction to restore order. Their performance underscores the importance of rapidly deployable land forces and illustrates the fighting spirit, high morale and outstanding state of training of today's Army.

THE IMPERATIVES OF U.S. NATIONAL STRATEGY

The worldwide deployment of U.S. soldiers today reflects both the realities of U.S. interests and the nature of the world environment in which these interests must be protected.

The first function of our government is to preserve the United States as a free nation with its fundamental values and institutions intact. Our broad historic, social, and economic interests require attention to myriad events, issues, and changing conditions virtually everywhere in the world.

U.S. security interests in Europe and the Far East, where miracles of economic growth occurred under the umbrella of U.S. protection, remain the cornerstones of our foreign policy. Our commitment to Israel has been reaffirmed by every President since President Truman. The Middle East, and particularly the Persian Gulf, has assumed greater importance since the 1970's because of free world reliance on its energy resources. Other strategic minerals located throughout Africa and elsewhere in the Third World lend geopolitical significance to those regions as well.

U.S. freedom of the seas and airways and access to space, foreign markets and critical resources will remain fundamental U.S. interests for the foreseeable future.

Protecting these worldwide interests will require recognition of continuing changes in the geostrategic environment and maintaining force capabilities to deter or, if necessary, defend them.

The strategic nuclear balance between the U.S. and the Soviet Union provides the military backdrop against which our security interests must be assessed. As this balance has shifted from an American strategic nuclear superiority, conventional forces have assumed a proportionately greater importance in deterring aggression by the Soviet Union. This deterrence calls for forces in place and prepared to fight and the ability to reinforce rapidly.

Because deployed land forces demonstrate an enduring commitment, they are particularly well suited for this deterrence mission. Accordingly, forward deployed divisions and logistics structures in Europe and Korea are key components of deterrence in those areas. The use of strategic air and sealift for rapid reinforcement and prepositioning of equipment and war reserve stocks for land forces further strengthens this deterrence.

In the Third World where the U.S. has significant long-term interests, the decades-long process of decolonization has seen the creation of more than 100 new states since the end of World War II. Tensions associated with the processes of economic and social development have often been reinforced by ideologically motivated subversion or outside intervention. During this period of cold war and detente between the superpowers, more than 300 conflicts have occurred elsewhere. Violence and insecurity have become endemic factors in the international environment. Currently some 40 wars or active insurgencies are ongoing.

In this environment, reassurance of allies must be recognized as an important element of our national strategy. Mobile training teams, advisory teams, Army attache elements, and joint exercises constitute important means to this end. Because land forces are the largest and most influential military elements in many developing states, our Army has a particularly significant role there. When exercises involve combat service support troops -- medics, construction engineers, general support maintenance -- they can provide tangible assistance in national development, too. By diminishing the need for our direct military involvement, it multiplies the effectiveness of our own forces. Moreover, security assistance helps to build local and regional self-confidence.

Army forces have never deployed alone. We are dependent on other services for transportation and other support. But it is also true that every deployment of aircraft, Naval task forces, or Marines reminds our adversaries that a small U.S. presence can be reinforced rapidly and successfully by sizeable land forces.

ROLE OF THE ARMY

The Army of the United States must provide a visible and credible capability to support the attainment of national interests, to reduce the probability of armed aggression against the United States, and should war occur, to win and terminate the conflict on terms favorable to the United States.

The Army must provide the nations's leadership with sound military advice and options appropriate to the level of hostilities across the full spectrum of conflict from counterterrorism through major conventional war to nuclear and chemical exchanges.

OVERVIEW OF ARMY CAPABILITIES

In large measure, the composition and capabilities of today's Army to respond to crises arise from the commitments of the past. Today's Army has been shaped by United States foreign and defense policy as well as by budgetary constraints.

Despite the magnitude of the Army's mission and the scope of the threat to our national security, the Army we've maintained since the mid-1970's is the smallest in 33 years. By way of comparison, the Active Army is the fifth largest in the world. This fact conveys our belief that the size of the Army, while important, is not paramount. Size alone cannot compensate for a guarantee of any Army's readiness to carry out its wartime mission.

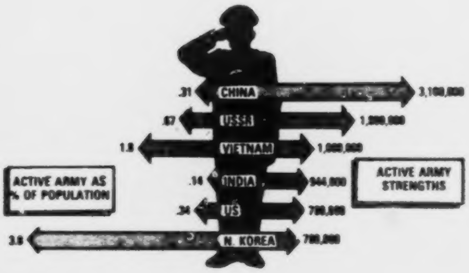


TABLE 1.2

Our deployed forces are backed by strategic reserves in the continental United States consisting of 10 Active and 9 Reserve Component divisions in a mix of infantry, armor, airborne, airmobile and mechanized infantry. Any part of this strategic force is prepared to move on short notice to any trouble spot in the world.

The Active Army is backed by over 683,000 trained and motivated soldiers in the Army National Guard and Army Reserve. Additionally, there is a growing Individual Ready Reserve force. These citizen-soldiers constitute a critical component of the Army's overall capability to fulfill its missions.

The Army's civilian workforce of nearly 400,000 employees constitutes a major component of the Total Army equation. Their special skills and expertise are essential to the achievement of an Army of Excellence.

Much of the progress over the past 3 years reflects the President's request for sufficient funds to achieve our transformation to a modern fighting force. This transformation includes addition of a 17th Active division, restructuring of existing Active light divisions, additions to the Army National Guard and Reserve to compensate for shortfalls in the Active Component force structure, extensive equipment modernization, and an increased ability to sustain conflict. The Army's leadership is dedicated to honoring our country's commitments by developing this Army of Excellence.

Just as today's Army is a force shaped by history, tomorrow's Army will be determined by today's events and decisions. The Army looks to the Nation, in particular its leadership, to provide the resources whereby it can accomplish its mission. The Nation looks to the Army to fulfill its responsibilities in support of national goals and interests. Properly supported, the Army can and will meet the challenge.

SECTION II: THREAT ANALYSIS - The Global Challenge

"The enemy never sleeps. (L'Ennemi ne s'endort.)"

-- A French Proverb

THE SOVIET THREAT

The primary threat to U.S. security today is the Soviet Union. The Soviets are dedicated to a single goal, the attainment of world supremacy. To achieve this goal, they seek at least to diminish, and perhaps to nullify and supplant the influence of the United States and its allies. In the years ahead, the Soviet Union will continue to exploit and create new opportunities to establish communist dominated regimes around the world.

Changes in Soviet leadership have not altered Moscow's quest for its version of peace -- a world in which the Soviets possess unchallenged military power. Following Premier Brezhnev's death, his successor, Yuri Andropov, stated: "We well know that peace cannot be achieved by begging from the imperialists. It can be defended only by relying on the invincible might of the Soviet Armed Forces." Soviet foreign and domestic policies are focused on attainment of the Soviet version of peace. All other priorities are subordinated to the achievement of this fundamental goal.

Military strength is the foundation of Soviet national power and the key to the Soviet drive for world domination. The Soviets have built impressive air and naval forces and have thrust headlong into space exploration and research. Simultaneously, they have enhanced their ground forces by adding divisions and modernizing every aspect from air defense to armored forces to military engineering. This has been the most extensive modernization and military expansion anywhere in the world. Soviet ground forces include 191 active divisions, a force that dwarfs all western armies.

SOVIET GROUND FORCES

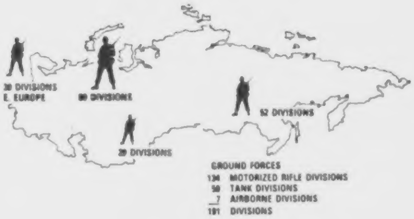


TABLE 2.1

SOVIET MILITARY GROWTH

The Soviet appreciation for the political utility of military might begins with Lenin himself. Emphasis on military modernization and growth is traceable in an almost unbroken line to the very birth of the Soviet state. In this context, it is not surprising that the Soviets continue to devote a large measure of their resources to the attainment of military supremacy. During the past three years, the Soviet Union has produced three times as many tanks and more than four times the number of other armored vehicles as the United States.

US/USSR EQUIPMENT PRODUCTION
1980-1982

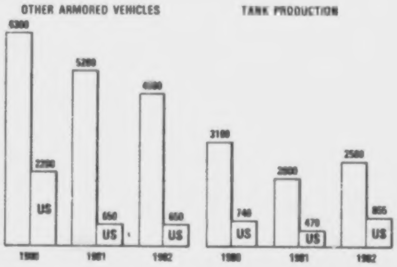


TABLE 2.2

As the chart below shows, the Soviet military investment program remains greater than ours and each year adds additional military assets to an inventory already much larger than our own.

MILITARY INVESTMENT
US/USSR

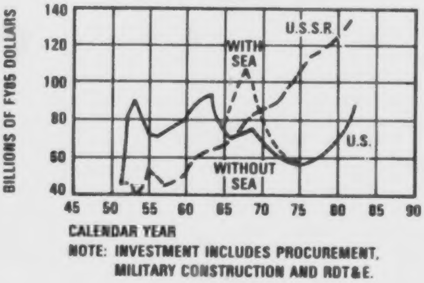


TABLE 2.3

Over the past two years, the Soviets have fielded qualitatively improved attack helicopters, air defense systems, towed and self-propelled artillery systems, armored personnel carriers and tanks. American land power faces a large, modern, well-equipped enemy who has virtually more of everything, whose major systems at least equal ours in quality, and who continues to commit greater resources to its military programs than we do.

The Soviet Army is extensively trained to fight under chemical conditions as well as in a conventional environment. The Soviets have substantial stockpiles of chemical weapons and are capable of employing them effectively, as they have demonstrated in Afghanistan, Laos, and Kampuchea.

Improvements in Soviet chemical warfare capabilities have been paralleled by strategic and theater nuclear force capability improvements. The ICBM force continues to be modernized, replacing older systems with more accurate ones having a greater number of warheads. The SS-20 force continues to expand, placing the U.S. and its NATO allies at an ever greater disadvantage in theater-strategic systems. Nuclear-capable artillery systems are being introduced at lower levels of command. Despite equality or superiority in virtually every area of comparison, the Soviets continue to push forward with the development and fielding of new systems.

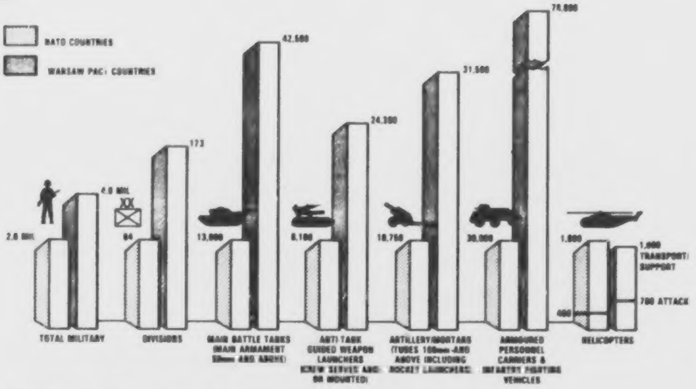
WARSAW PACT GROWTH

In addition to modernizing its own land forces, the Soviet Union is directing the modernization and restructuring of other Warsaw Pact forces. A NATO-Warsaw Pact comparison (Table 2.4) emphasizes the growth of the Warsaw Pact war machine and the magnitude of the threat to Western Europe.

NATO-WARSAW PACT FORCE COMPARISON

(IN PLACE IN EUROPE)

-1981-



NOTES: 1. WARSAW PACT DIVISIONS NORMALLY CONSIST OF FEWER PERSONNEL THAN MANY NATO DIVISIONS BUT CONTAIN MORE TANKS AND ARTILLERY, THEREBY OBTAINING SIMILAR COMBAT POWER.

2. FORCES IN PLACE IN NATO EUROPE. WARSAW PACT FORCES AS FAR EAST AS BUT EXCLUDING THE 3 WESTERN MILITARY DISTRICTS IN WESTERN RUSSIA (MOSCOW, VOLGA & URAL MILITARY DISTRICTS).

TABLE 2.4

SOVIET MILITARY ASSISTANCE

The Soviet Union consistently exports more military equipment to the Third World than any other country.

The Soviets and their East European allies account for well over half of the shipments to the Third World of several major types of weapons, including 65 percent of tanks, 60 percent of high-performance aircraft, and 59 percent of surface-to-air missiles. These military transfers provide the Soviets a valuable entry into many Third World nations and allow the Soviets to exploit these contacts for subversive activity.

Additionally, the Soviet Union actively equips and trains surrogate forces, dissidents and revolutionaries around the world. Through the use of arms supplies, security assistance teams, Communist Party organizations, proxy forces, and even Soviet regular forces, Moscow has become a major imperial power. Using both overt and covert means, the Soviets seek to expand their influence in key Third World regions while placing the security of the United States in jeopardy.

In Southeast Asia, massive Soviet support to Hanoi's military operations in Laos and Kampuchea has produced a significant benefit for the Soviets. The Vietnamese are highly dependent on Soviet military and civilian advisors and extensive materiel aid. In exchange for materiel support, Hanoi has granted the Soviets access to valuable air and naval facilities from which the Soviets oversee lines of communication and strategic choke points along the Asian littoral.

MAJOR SOVIET LAND POWER EQUIPMENT DELIVERED TO THE THIRD WORLD 1977-1982

	TOTAL	NEAR EAST AND SOUTH EAST	SUB-SAHARAN AFRICA	LATIN AMERICA	EAST ASIA AND PACIFIC
TANKS/SELF-PROPELLED GUNS	7,065	5,205	1,140	80	640
LIGHT ARMOR	8,680	6,560	1,580	175	365
ARTILLERY (100-MM AND OVER)	8,580	5,115	2,010	480	645
HELICOPTERS	910	620	125	35	130
SURFACE-TO-AIR MISSILES	11,580	9,405	1,575	425	175

TABLE 2.5

COMMUNISM IN THE CARIBBEAN BASIN

Using Cuba as a proxy, the Soviet Union exerts considerable influence in the Western Hemisphere. Soviet and Cuban activities have already resulted in the establishment of a hostile regime in Nicaragua and Communist-backed insurgencies in at least three other Latin American countries.

IDENTIFIED SOVIET MILITARY DELIVERIES TO CUBA

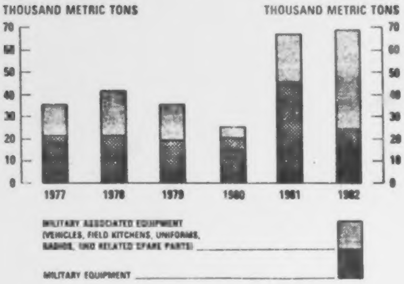


TABLE 2.6

The recent thwarting of a Cuban and Soviet attempt to establish a base in Grenada was a serious blow to communism in this hemisphere. In the long-term, however, it probably will not diminish Soviet and Cuban efforts to revolutionize the region.

It is clear that the Soviet Union recognizes Latin America, and particularly the Caribbean, as the soft underbelly of the United States. Soviet and Cuban efforts to increase their influence in Central and South America continue to threaten U.S. security and interests in this region.

THIRD WORLD INSTABILITY

Compounding the Soviet threat is the long-term factor of Third World instability. Whether inspired by historical, economic, political or social factors, Third World conflicts provide prime opportunities for Soviet inroads.

Rapid economic modernization of Middle Eastern and Southwest Asian Islamic societies, coupled with the Arab-Israeli and Iran-Iraq conflicts, have provided the Soviets with an opportunity to exploit regional turmoil to shift the regional balance of U.S./Soviet power significantly in their favor. The implications of Soviet success in such adventure are clear and serious. Not only would American security interests and the American economy be adversely affected, but Western Europe and Japan, to whom Middle East oil is critical, could be blackmailed.

African nations, many of which recently emerged from colonialism, are also targets of Soviet intrusions of influence. Soviet influence, and that of its surrogates, currently are most evident in Angola, Ethiopia, and Mozambique, while Libya continues to be a major consumer of Soviet arms and a major exporter of radical Marxist philosophy and anti-Western terrorism. Although other areas of the world may be more critical to the vital interests of the United States than Africa, continued growth of the Soviet presence and influence in this mineral-rich continent must be considered potentially dangerous to the security of the United States and its allies.

KOREAN BUILDUP

In Korea, where United Nations forces fought only 30 years ago, a potential crisis area still exists. The North Koreans are continuously improving both their war-fighting capability and their sustaining base. They remain a significant threat to the stability of the area. A comparison of Northeast Asian military trends (see Table 2.7) highlights the potential destabilizing effect of North Korea's military growth.

TRENDS IN NE ASIA–1965-1983
NORTH KOREA-ROK-JAPAN

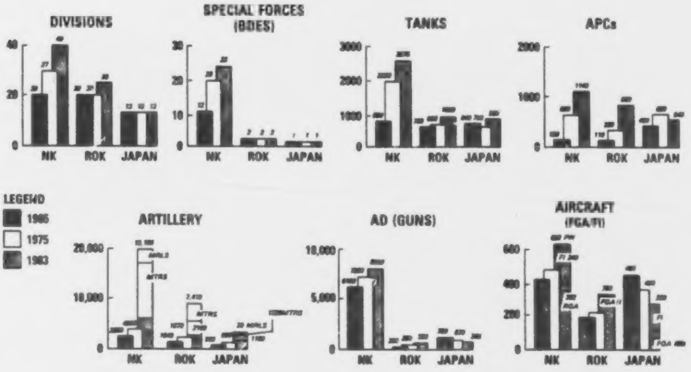


TABLE 2.7

LOW INTENSITY CONFLICT

Around the globe, and increasingly outside the NATO area, the U.S. and its friends and allies face potential conflicts. Most of these are likely to be of low intensity, yet even these can be as dangerous to the vital interests of the United States as mid-intensity warfare or superpower confrontation. Increased Soviet aggressiveness and improved Soviet power projection capabilities increase the likelihood of conflict escalation as local conflicts spill over into regional alignments. Conflicts which affect America's vital interests may erupt in this hemisphere or at a variety of locations around the globe.

SPECTRUM OF CONFLICT

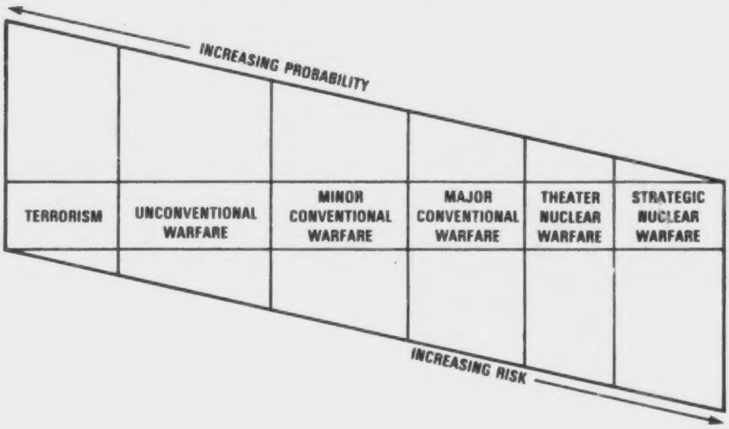

INCREASING PROBABILITY
TERRORISM
UNCONVENTIONAL WARFARE
MINOR CONVENTIONAL WARFARE
MAJOR CONVENTIONAL WARFARE
THEATER NUCLEAR WARFARE
STRATEGIC NUCLEAR WARFARE
INCREASING RISK

TABLE 2.8

SOVIET WEAKNESSES AND VULNERABILITIES

Even though Soviet military capabilities continue to improve and expand, they must do so within certain constraints. Moreover, the simultaneous aggravation of a number of troublesome prevailing conditions ultimately could pose a significant obstacle to the successful execution of Soviet war plans. Among the most prominent long-term weaknesses which could affect Soviet military decisions are: the worsening state of the Soviet economy - the result of a lethargic work force, inefficiency at all levels, increasing industrial costs, and critical technology gaps; the questionable reliability of some Warsaw Pact allies; discipline and morale among national minorities; and demographic trends which project increasing numbers of non-Russians in the USSR population.

Among the more immediate Soviet battlefield vulnerabilities which the West might exploit are: the need for improved leadership at the lower levels, the criticality to Soviet battlefield success of operational timing, and various equipment shortcomings. While we could not hope to redress the imbalance between Soviet and U.S. fielded systems purely through attacking Soviet weaknesses and vulnerabilities, a Western strategy that combines that approach with efforts to counter Soviet military power in the field will increase our chances for success.

SUMMARY

At a time when the U.S. has relatively fewer resources and far greater commitments, we are confronted by a relentless adversary bent on global superiority, projecting power across the entire spectrum of conflict from possible general nuclear war through local conflicts and insurgencies to terrorism.

Despite troublesome conditions both at home and abroad and recent major leadership changes, the Soviet Union shows no signs of reduced commitment to its expansionist policies. On the contrary, there continue to be signs of increasing Soviet assertiveness, particularly in response to U.S. intermediate-range nuclear force deployments in Europe. Such actions as the more direct Soviet involvement in the Arab-Israeli conflict reflect these policies.

SECTION III: TODAY'S ARMY - Striving for Excellence

> "With regard to excellence, it is not enough to know it or to understand its application, we must try to have it and be prepared to use it."
>
> \- ARISTOTLE

The Army leadership of the past ten years has made difficult but sound decisions guiding the Army's transition from a hollow force to an Army of Excellence. Today's Army is beginning to bear the fruit of these earlier decisions. While considerable progress has been made, we need continued congressional support to assure our programs sustain our record of achievement. It takes prolonged and concentrated effort to achieve the excellence we seek.

A guiding principle for today's Army is that excellence in people, equipment, and training can more than compensate for disadvantages in size and geography. We can neither expect nor attempt to match the Soviets soldier for soldier or tank for tank.

An important benchmark for judging the degree of excellence the Army is achieving is how efficiently and economically we are using the resources provided. Here the Army can be proud of its management improvement record. The Army pledges to continue to pursue this aggressive and innovative management improvement program in the years to come.

While the Army is justifiably proud of its accomplishments, it is also aware of its deficiencies and is mindful of the challenges to come. The remainder of this section discusses the achievements and shortcomings of the past year, emphasizing those areas in which continued congressional support is required.

Among the major achievements in 1983 were:

- Significant improvements in combat readiness in Active and Reserve Component (RC) units.

- Activation of new combat and combat support units, increasing Army fighting and sustaining power, while maintaining a stable end strength.

- Improvement in the quality of servicemen and women entering the Army, having a significantly beneficial effect on professionalism, discipline and readiness.

- Successes in recruiting and reenlistment, solidifying the success of the volunteer army.

- Advances in the development of tactical doctrine which exploit the potential inherent in modern weaponry.

- Development and fielding of top quality weapons and support systems.

- Notable improvements in the quantity and quality of resources available for Reserve Component forces and in the working relationship between the Active and Reserve Components.

- Over $1.4 billion in efficiencies and economies during the FY 81-83 period with a $10.1 billion follow-on effect for the FY 84-89 period.

Among the shortcomings that cause the Army most concern are the following:

- Shortfalls exist in our ability to mobilize quickly adequate manpower with specialized skills.

- Some Reserve Component forces have not met the desired standards of readiness, especially combat service support units.

- Strategic lift is inadequate to deploy Army forces fast enough to meet the expected wartime needs.

- Prepositioned unit sets of equipment are inadequate to accommodate follow-on forces. War reserve stocks to replace anticipated combat losses must be increased.

- Additional highly mobile, light infantry forces and special operations forces are needed.

- Chemical deterrence is inadequate; the chemical retaliatory capability is weak; decontamination capability is insufficient.

Each of these points will be discussed in greater detail in the following pages.

MANNING THE ARMY

> "...We thank God that you had the foresight and courage to send in the Rangers. While we waited for the Rangers to evacuate our campus...we experienced many chilling and sad moments. The most upsetting of these was the sight of an American helicopter being shot down by enemy fire. There were tears in our eyes as we scanned the ocean water for the sight of any survivors. We knew then how much our lives meant to the brave men fighting for our safety."
>
> - Excerpt from a letter to President Reagan from medical students rescued in Grenada.

PEOPLE ARE THE ARMY

Above all else, in peace and in war, people are the Army. The Army's proud story is told by the unselfish deeds of its men and women. In the final analysis, the Army's performance is a function of the efforts of its basic element: the soldier.

The strength of the Army depends on the quality of our soldiers and on how well we lead them. We have worked hard to recruit our very best citizenry and to provide the professional environment that would convince the best to stay in the Army. The recruiting and retention statistics and the professional performance of our small units whether fighting in Grenada, training friends in Honduras, or participating in large field exercises with our major allies attest to our considerable success.

Without constant attention to the factors that determine success in maintaining a hard-hitting Army, we will lose our momentum. It is critical that we keep compensation competitive with the civilian sector. We must have an adequate set of special incentives to help us recruit exceptional quality soldiers for particular needs. Finally, we cannot slacken our programs to improve the living and working environment. Old, unattractive barracks; congested office space; and drafty maintenance areas discourage professionals from continuing to serve.

Throughout our history, the American soldier has been the ultimate source of our strength. Today, we challenge each soldier and Army civilian to set personal goals which lead to excellence, and to pursue them with leadership, initiative, drive, and perseverance. The result: marginal performers become good, the good become better, and the better become excellent.

Last year the quality of soldiers coming into the Army was better than ever. In turn, these gains in first-term quality allowed us to offer reenlistment to the most competent, professional soldiers with demonstrated leadership potential.

The New Manning System, with its COHORT units and regimental structure seeks to improve stability and cohesion in units. We have developed a plan to improve family life and to focus on better facilities. We have also strengthened our campaign against alcohol and substance abusers. All these efforts support our belief that nothing is more important to the Army than its soldiers.

RECRUITING AND RETENTION

In all we do, we need to think of the Total Army -- that is, the Active Component (AC), the Army National Guard (ARNG), the Army Reserve (USAR) and Army civilians. With the consistent support we have had from the Congress, current recruiting and retention trends are encouraging.

1983 RECRUITING ACCOMPLISHMENTS
ACTIVE COMPONENT

	OBJECTIVE	ACTUAL	PERCENT
Non Prior Service			
Males	116,000	116,215	100.2
Females	16,400	16,516	100.7
Prior Service Personnel	12,100	12,606	104.2
Total	144,500	145,337	100.6

TABLE 3.1

1983 RECRUITING ACCOMPLISHMENTS
RESERVE COMPONENTS

	OBJECTIVE	ACTUAL	PERCENT
USAR	64,350	65,392	101.6
ARNG	89,000	89,103	100.1

TABLE 3.2

Strength Levels. Since the end of the draft ten years ago, Congress has stabilized the Active Component strength at about 780,000. Active Component strength on 30 September 1983 was 779,643, and we expect to meet the authorized strength of 780,000 in fiscal year 84. The FY 85 budget request is for an Active Army end strength of 780,800.

Congress also prescribes the strength of the Reserve Components. The actual Selected Reserve strength of the Army Reserve on 30 September 1983 was 266,188. The FY 85 budget requests a strength of 298,447. Actual Selected Reserve strength for the Army National Guard on 30 September 1983 was 417,178 and is set for 433,000 in 1984. Our FY 85 budget, if approved, will support an ARNG strength of 447,283.

Recruiting. In 1983, the Total Army exceeded its enlisted recruiting objectives. Tables 3.1 and 3.2 show these accomplishments.

Quality Accessions. The Army seeks to recruit the greatest possible number of high school graduates. Increasing the number of high school diploma graduates (HSDG) the Army enlists each year will help to build a competency based force capable of handling our sophisticated equipment in the late 1980's.

While education is not the only consideration in building a competent force, a high school diploma is an excellent measure of an individual's retainability. Those who successfully complete high school tend to complete their enlistment as well. Also, high scoring young men and women more quickly grasp and retain the sophisticated training required on the Army's new weapons systems. Soldiers of this caliber tend to show a spirit of cooperation, respond well to good leadership, and promote good order and discipline.

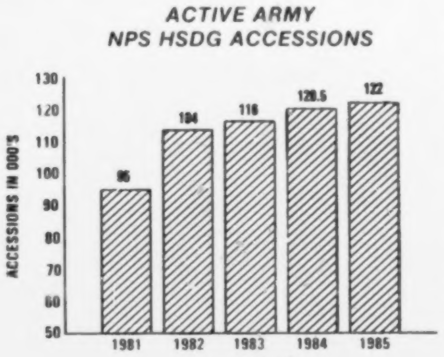


TABLE 3.3

FY 82 was one of the best recruiting years in history. The Army met its aggregate objectives and improved the number and proportion of new recruits who were high school graduates or scored average or above on the enlistment test. The Active Component enlisted 86 percent high school graduates, a 9.3 percent increase over 1981, and only 19.2 percent Test Category IV's, a 36.5 percent decrease from FY 81. Both the Reserve and National Guard achieved similar results.

FY 83 results indicate continued success. High school graduates enlisting in the Active Component increased to 88 percent. Test Category I-IIIA's represented 61.4 percent of all non-prior service (NPS) enlistments and Test Category IV's fell to 12 percent. The Army's College Fund and Bonus Program as well as the two-year enlistment option contributed to the qualitative improvements over the last three years, as did continued high unemployment, and an increase in the quality and quantity of major media advertising. However, as stated below, changes in these positive factors would be cause for concern because their relationship is critical.

Ultra VEAP (Army College Fund). To remain competitive in the quality recruiting market, the Army needs an enhanced educational incentive like the Army College Fund. Quality young people are the hardest to attract, and the Army must have an attractive educational incentive to continue momentum in the recruiting market.

Without it, the Army risks falling further behind the other services. This recruiting edge is also critical to the Army's force alignment efforts and to establish the quality manpower pool from which tomorrow's noncommissioned officer (NCO) leaders will be selected.

Under the Veteran's Educational Assistance Program (VEAP), soldiers' contributions up to $2,700 are matched by the Army 2:1. Any soldier, officer or enlisted, entering the Army after 1 January 1977 is eligible to participate.

The Army began testing "kickers" on 1 January 1979 to target higher-scoring high school graduates. Initial "kickers" were $2,000, $3,000, $4,000, and grew to $8,000 and $12,000 during FY 81. These have been the key to recruiting improvements in the quality high school graduate market.

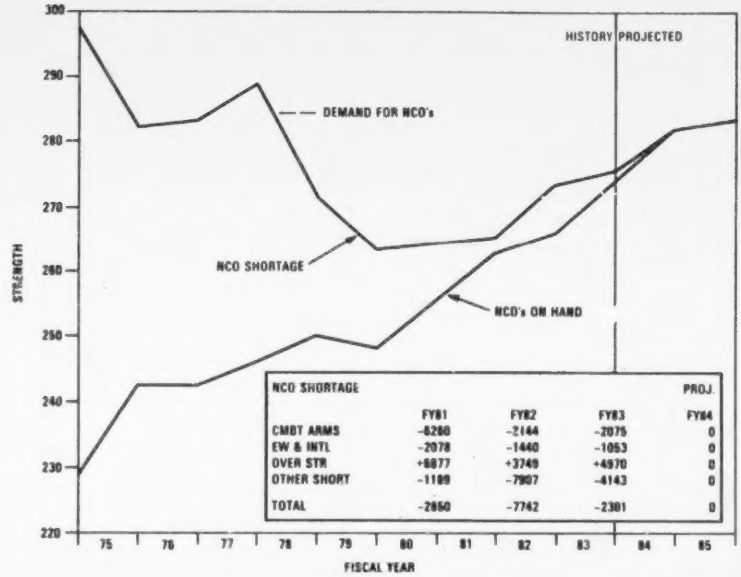
We began to apply this Ultra VEAP (Army College Fund) nation-wide in FY 82. Combined with enlistment bonuses to attract higher quality enlistees to military service, the Army improved its non-prior service, high school graduate Test Category I-IIIA enlistees from 38,700 (FY 81) to 67,900 (FY 83), a 75.5 percent increase.

Bonuses. Enlistment Bonus, Selective Reenlistment Bonus, and the Selected Reserve Incentive Program were approved by Congress to help the Army man the force. As a direct result, sufficient numbers of soldiers are now enlisting. However, the quality mix must now be directed to high-tech jobs. Last year, for instance, combat arms numbers and quality objectives were met. But, communications, intelligence and maintenance quality targets were not achieved. Bonuses are a prime remedy.

Reenlistment. During FY 82 and FY 83, the Army succeeded in reenlisting a satisfactory number of top quality soldiers. As a result, we should achieve 100 percent fill in our top five enlisted grades by the end of FY 84. Some shortages still remain in combat arms and intelligence fields, but we anticipate most of these will also be overcome in FY 84. Table 3.4 depicts our progress in resolving NCO retention problems.

Continuation of an effective Selective Reenlistment Bonus program is essential for us to reenlist not only sufficient numbers, but to achieve and maintain the right grade and skill balance. Experience tells us that we can balance skills as long as bonuses are available, but that many skill areas will develop shortages if the bonus level is reduced.

In terms of quality, the abundance of personnel in the reenlistment pool has permitted us to improve the force through increasingly tight reenlistment criteria. However, the improving economy and a smaller retention pool in FY 84 and beyond direct our future efforts toward improving the quality of soldiers currently in service.



TOP 5 ENLISTED STRENGTH
E5-E9

NCO SHORTAGE				PROJ.
	FY81	FY82	FY83	FY84
CMBT ARMS	-6260	-2144	-2075	0
EW & INTL	-2078	-1440	-1053	0
OVER STR	+6877	+3749	+4970	0
OTHER SHORT	-1189	-7907	-4143	0
TOTAL	-2650	-7742	-2301	0

TABLE 3.4

Successful reenlistment of high-quality soldiers will then depend on a stronger retention effort, an adequate reenlistment bonus program, increased in-service educational and self-improvement opportunities, and other key factors such as a competitive total compensation package.

FY 83 reenlistment results for the Active and Reserve Components were very strong overall and are highlighted in Table 3.5.

1983 REENLISTMENTS
ACTIVE COMPONENT

	OBJECTIVE	ACTUAL	PERCENT
FIRST TERM	31,400	30,474	97.1
MID TERM	30,300	28,621	94.5
CAREER	23,100	22,830	98.8
TOTAL	84,800	81,925	96.6
RESERVE COMPONENTS			
FIRST TERM			
USAR	8,064	6,260	78
ARNG	10,824	11,815	109
CAREER			
USAR	20,648	24,887	121
ARNG	60,891	61,457	101
TOTAL	100,427	104,419	104

TABLE 3.5

The Army plans to keep up this momentum through careful targeting of enlistment incentives, recruiting resources, and management initiatives. Our FY 84 goals are to enlist at least 90 percent high school graduates, 65 percent from Test Category I-IIIA, and no more than 10 percent from Test Catgory IV.

These are ambitious objectives in the face of a strengthening economy and decreasing unemployment, but the Army believes their achievement is considered essential to the successful manning of new equipment and execution of the AirLand Battle. To continue the flow of bright, well-educated and motivated soldiers, we need strong congressional support to maintain competitive pay and continue proven incentives like the Army College Fund and bonus programs.

Reserve Components. The Army's Reserve Components' goal is to man Reserve and Guard units at 90 percent of their wartime levels by FY 89. The Army's FY 84 Selected Reserve authorization and funding are for 711,000 soldiers, an increase of nearly 28,000 above the FY 83 Reserve Component manning level. This is an ambitious undertaking.

The Reserve Component Educational Assistance Program was particularly successful in recruiting Guard and Reserve soldiers interested in a college education. Nearly 11,300 enlisted under this program which awards up to $4,000 in educational assistance in exchange for a 6-year service commitment. More than 28 States offered low-cost educational loans and other educational benefits to attract recruits for the Army National Guard, but only Hawaii offered similar benefits to the U.S. Army Reserve. Many States also provide tax-free Guard income, unemployment benefits, and free license plates to Guard personnel. Efforts to extend these benefits are underway.

PERSONNEL READINESS

Combat units at the proper strength, soldiers qualified in the right skills, and the correct distribution of experience and leadership are key to an Army of Excellence.

To date, adequate recruiting and reenlistment funding from Congress has fostered substantial progress in filling the hollow Army of the late 70's. In October 1980, only 77 percent of the 1,100 Army National Guard units were at their authorized strength levels (see Table 3.6). This situation improved steadily and by April 1983, 88 percent were at authorized levels even though the total number of Guard units had increased by 79.

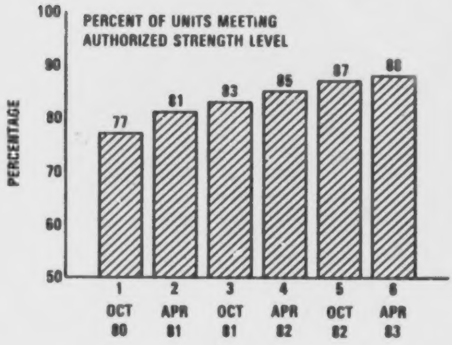

PERSONNEL READINESS
ARMY NATIONAL GUARD

TABLE 3.6

The Reserve made similar progress. In October 1980, just 56 percent of USAR units met their authorized strength levels (see Table 3.7). This had increased to 75 percent by April 1983. The number of USAR units grew by 42 between April 1982 and April 1983 causing the slight decline from 80 percent to 75 percent.

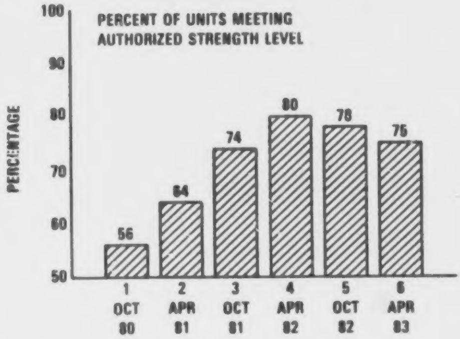

PERSONNEL READINESS
US ARMY RESERVE

TABLE 3.7

The result for both the Active and Reserve Components has been a reduction in units rated not combat ready due to personnel factors. For major combat units - divisions, brigades, and armored cavalry regiments - 35 units (about one of every two) were not combat ready for personnel reasons in October 1980 (see Table 3.7). By April 1983, that number had been reduced to 18 major combat units, or 25 percent.

PERSONNEL READINESS
MAJOR COMBAT UNITS

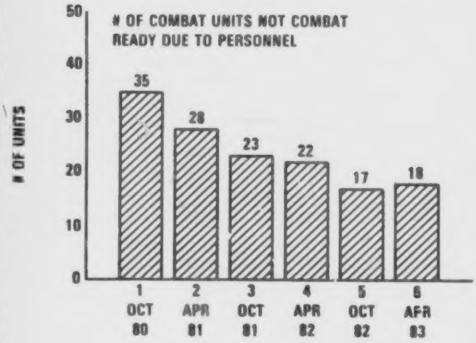


TABLE 3.8

Women in the Army. The number of women in the Army has increased dramatically in the last two decades. Since FY 60, the female strength has grown from 4,200 officers and 8,300 enlisted soldiers to about 9,500 officers and 66,000 enlisted. Reserve Component figures show the same trend.

Our objective with women soldiers is to provide them with the maximum opportunity to succeed. Toward that end, our policy has been brought in line with Navy and Air Force statutes which exclude women from serving on combatant ships and planes, reflecting the will of the Congress.

To define where women should serve on the battlefield, the Army conducted a study in FY 83 leading to the development of a system which identified the risk of direct combat for every position in the Army. Called the Direct Combat Probability Coding Policy, this system excludes women from jobs routinely engaged in direct combat. These positions are located in front of the combat brigade's rear boundary where we expect the most frequent and violent combat. However, enlisted women may serve in 86 percent of all specialties, that is, in 302 of 351 military occupational specialties.

Within this framework, Army policy is to provide women with the maximum number of meaningful career opportunities. Toward that goal, we project steady and healthy end strength growth to approximately 12,000 officers and 70,000 enlisted women by the end of FY 87.

Stronger Discipline. A high state of discipline and morale ensures stable performance under stress, and this leads to high performance in combat. A disciplined Army can withstand the shock of battle without faltering.

Trends for key discipline indicators since FY 74 are very encouraging. All four major crime categories displayed a downward trend.

VIOLENT CRIME

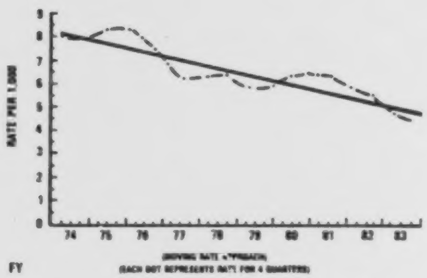


TABLE 3.9

CRIMES AGAINST PROPERTY

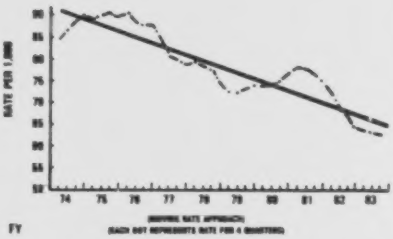


TABLE 3.10

Two key indicators are the AWOL and desertion rates. Both declined steadily during the past decade. The desertion rate is the lowest since FY 62, and the AWOL rate is at the lowest level on record.

AWOL

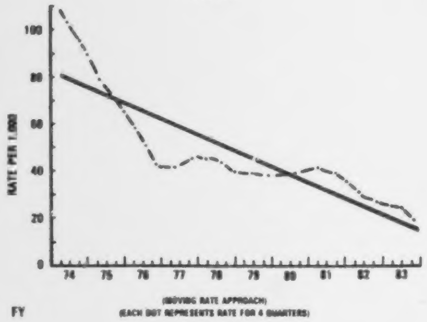


TABLE 3.11

DESERTION

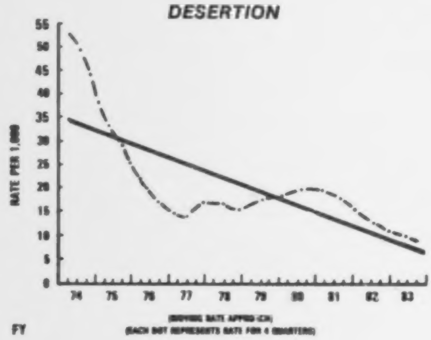


TABLE 3.12

The positive trend in all four major discipline indicators, particularly the desertion and AWOL rate, is tied to the quality of the soldier. The highly motivated, achievement-oriented young people entering the Army today are less likely to commit crimes or resolve problems through AWOL or desertion. Recruiting from the quality market has paid clear dividends in improving discipline.

STABILITY AND COHESION

The Army is implementing a New Manning System to improve combat effectiveness by reducing turbulence and enhancing cohesion, esprit, and loyalty in Army units. The New Manning System, which currently affects armor, infantry and cannon field artillery units, has two subsystems: the COHORT Unit Movement System and the U.S. Army Regimental System.

COHORT (Cohesion, Operational Readiness and Training). COHORT is a program designed to increase stability in combat arms units. COHORT establishes a three-year life cycle for companies and batteries. First term soldiers are recruited for a specific COHORT unit and undergo Initial Entry Training as a group. Then, they are assigned to a combat unit in the U.S. where they join a cadre. After initial duty in the Continental U.S. (CONUS), most COHORT units deploy overseas on an established schedule. The stable unit environment should allow leaders to establish a greater sense of cohesion, belonging, and unit pride.

During FY 83, 25 additional COHORT units were formed bringing the total to 52. Ten COHORT units had deployed overseas (eight to Europe, two to Korea) by the end of FY 83. Implementation is currently proceeding at a modest and deliberate pace in a continuing effort to identify and resolve the systemic problems which could impede large scale application of the concept.

While the number of participating units is too small to have a significant impact on Army-wide turbulence now, the lessons learned from the evaluation will provide the basis for an orderly expansion.

U.S. Army Regimental System. The Combat Arms regimental System allows soldiers to affiliate with a single regiment throughout their careers, thereby developing a greater sense of loyalty, esprit, and belonging for both soldier and family. Soldiers' careers will be managed based on regimental affiliation to provide recurring assignments to units of the regiment.

Regiments will consist of groups of similar CONUS and outside of CONUS (OCONUS) battalions under a single regimental designation. These groupings are for management purposes only and do not affect current division-brigade tactical structure.

On 5 October 1982, the Army approved the formation of 64 combat arms regiments. Eleven of the approved 64 combat arms regiments were implemented by the end of FY 83.

Control of Military Occupational Specialty (MOS) Migration. In the past, we could identify imbalances in our military occupational specialties but had no timely way to control and track migration of soldiers from one specialty to another. Recently, we have used an automated system, The Skill Alignment Module, to ensure specialty changes are permitted based only on priority needs of the Army.

We are evaluating expansion of the system to include formal training in conjunction with job reclassification, and adding control of additional skill identifiers. Timely adjustment of specialty imbalances by this automated system will align the force to meet force modernization needs and enhance our stability.

Full-Time Support of the Reserve Components. Reserve Component units comprise 22 percent of Army forces earmarked for rapid deployment with the U.S. Central Command (USCENTCOM). This situation highlights how much the Army relies on the Army National Guard and Army Reserve to meet contingency requirements.

To help them reach this unprecedented readiness level, we have raised the numbers of Active Component, Active Guard/Reserve (AGR) and civilian military technicians (MT) who serve in full-time support. These personnel serve at all levels and help organize, supervise, train, and administer the Reserve Components. The largest gain occurred in the numbers of Active Guard/Reserve and technicians at the unit level (see Table 3.13).

FULL-TIME SUPPORT STRENGTH
(Active Guard/Reserve and Military Technicians)

	FY 82	FY 83	FY 84	FY 85
ARNG				
AGR	11,374	13,757	16,632	26,583
MT	22,557	22,742	24,587	24,587
USAR				
AGR	5,894	7,033	9,022	15,027
MT	6,753	6,606	7,585	7,585
TOTAL	46,578	50,138	57,826	73,782

TABLE 3.13

We believe that planned increases in the Full-Time Support Program are fully justified by the growing requirement for Army National Guard and Army Reserve units to achieve readiness standards comparable to the Active Force. Constrained growth in the Full-Time Support Program would seriously impede the efforts of the Army both to modernize and to improve the fighting capability of its Reserve Component units.

QUALITY OF LIFE

The Army is not merely a job or a place to work. It is a way of life based on national service. At its foundation, that way of life has a two-way commitment: by the soldier to the Army and the Nation; and in return, by the Army and the Nation to the soldier. Benefits are visible and tangible evidence of that national commitment. Benefits reinforce the soldier's commitment to serve, despite hazards, hardships, frequent moves, and uncertainties. This reinforced soldier commitment is reflected by better combat effectiveness. Quality of life benefits not only reaffirm the depth of the Nation's commitments to its soldiers, they also vitalize the Army.

ARMY FAMILY PROGRAM

Family Action Plan. The Army came to realize that although it recruits soldiers, it retains families. In recognizing the importance of the soldier and his/her family to the Total Army family, the theme for the Army in 1984 is "The Army Family." Accordingly, we have published the Army Family Action Plan. This plan was spurred by the results of three family symposia held yearly from 1980-1982 as well as a 1983 Family Action Planning Conference. These productive events surfaced hundreds of needs and comments on the state of family support.

In April the 1983 White Paper on the Army Family was published. The White Paper stated the Army philosophy toward its families: "A partnership exists between the Army and Army families. The Army's unique missions, concept of service, and lifestyle of its members -- all effect the nature of this partnership. Toward the goal of building a strong partnership, the Army remains committed to assuring adequate support to families in order to promote wellness, to develop a sense of community, and to strengthen the mutual reinforcing bonds between the Army and its families."

Some Family Action Plan initiatives require budgetary action while others only require procedural or administrative change. An example of the former is the upgrade of child care facilities at many of our installations. Addition of spouse employment data on assignment preference statements of the military member falls in the second category.

Both the Army Staff and our major commands are working on the budget submissions required to achieve the Army Family Action Plan goals. Congressional support for these key programs will send a very positive signal to our families.

We must therefore continue our push to improve Army community facilities and community programs. In this regard, Army Community Service (ACS) responsibilities have recently been expanded in line with congressional and DOD mandates. Additions include the Exceptional Family Member Program, Consumer Affairs and Financial Planning Program, and the Family Advocacy Program, which addresses child abuse/neglect and spouse abuse.

Since ACS has been designated as each unit commander's primary agent for soldier and family support programs, it needs a high priority to ensure needed resources for these new missions.

In the area of child development services, we have begun a general upgrade of child care centers to comply with recent DOD and Army standards. However, despite this work (keyed primarily to fire and safety concerns), most existing facilities will remain inadequate. They need to be replaced with new facilities to meet community and family needs, and to provide child development services.

Soldier Programs. We believe that living and working conditions for our soldiers should be comparable to those of civilians they defend. We are modernizing many of our soldiers' dining facilities to increase their efficiency, eliminate health and safety hazards, and, most important, improve food service.

However, we also urgently need more physical fitness centers to support the Total Army physical fitness program. Chapels and chapel facilities are required for soldiers and their families to sustain spiritual growth. Skill development centers, libraries, theaters and recreational programs provide a respite from training, particularly in overseas areas where recreational opportunities are minimal or expensive. Recreational programs and physical activities are constructive alternatives to drug and alcohol abuse and create a wholesome environment for our soldiers and their families.

Though requirements are many, we have made progress. For instance, during FY 83, more than 500 construction projects were underway. Over 330 were completed, including 75 troop housing, maintenance, and community projects, and 98 medical and utilities improvements. Plans for the future emphasize barracks, medical clinics, hospitals, and equipment maintenance depots.

The Army's goal is to house all soldiers in modern barracks by 1992 and to modernize major medical centers by 1995. Congress helped build this momentum by authorizing $276 million in additional projects funded by savings in FY 83 and FY 84, and by emphasizing soldier-oriented projects. With continued congressional support, the Army will rehabilitate or renew all the basic facilities that affect the soldier and civilian work force by 2004.

Family Housing. The Family Housing Program includes new construction and improvements to government quarters, as well as the operations and maintenance of our current worldwide inventory. New construction is planned where the community does not offer acceptable alternatives. Improvements are designed to modernize antiquated quarters, bring them to contemporary standards, prevent deterioration, and upgrade substandard quarters.

Soldier surveys show that family housing is an important factor in reenlistment. In addition, as we implement the New Manning System, family housing will be even more important to soldiers and their families. When soldiers deploy to unaccompanied tour areas, housing will be needed for their families at their regimental home base stations. Also, additional sets of quarters overseas will be needed to allow concurrent family travel when units deploy to accompanied foreign tour areas. The success of the New Manning System and the retention of career soldiers, then, are linked to continued improvements in family housing.

Military Retirement. We fully understand the growing cost to our nation of the military retirement system and agree with a careful review of options for it. At the same time, we emphasize that the retirement system is but one element of total compensation. More important, we believe the critical test for proposed changes in the total compensation package is the effect on combat readiness in our force.

Unfortunately, there has been increasing concern among soldiers that critics of the current system are comparing military retirement to an old age pension, which it is not, and proposing piecemeal changes without regard to the total compensation package context. Moreover, the proposals may create the impression that the government and the Army are unreliable employers because of unilateral changes to the "employment contract." Coupled with caps on pay increases which ultimately suppress retired pay, the proposed changes would constitute a second reduction of retirement benefits.

Because of these concerns, we continue to oppose piecemeal changes to the military retirement system, and support the in-depth review and analysis by the Fifth Quadrennial Review of Military Compensation. This review has established an analytical point of departure for evaluating our compensation system. But, we must await a validation of the review's proposed alternatives before we can measure their effect.

CIVILIAN WORK FORCE

The civilian work force provides much of the Army's sustainment base. The Army must recruit, retain, and motivate highly qualified civilian employees to provide key support in areas like equipment maintenance, procurement, research, finance, and automation.

As the national economy and employment situation continue to improve, adequate civilian support measures gain importance to parallel recruiting and retention incentives for soldiers.

Emergency Essential Employees. Emergency essential Army civilians who support critical systems overseas during crisis or war conditions are vital to our mobilization plans. We require their signed agreement to remain on the job as a condition of employment. We need further measures, however, to compensate for their support, including protective equipment, pay differentials, and adequate life insurance coverage during hostilities.

Benefits and Compensation. Compensation, benefits, and related out-of-pocket moving costs influence employment and retention decisions. One major issue in this area is the required contribution to both the Social Security System and the Civil Service Retirement System for employees hired after 1 January 1984. Congress has provided temporary relief, but we need a reasonable supplemental civil service retirement plan at low cost for the long term. Otherwise, new employees will be paying more than 14 percent of their salary into retirement programs in 1986, more than other employees and unaffordable by many.

Another issue is the federal merit pay system. To stimulate performance of managers, it is important to provide a stable pay incentive system. It should be convenient to administer and preserve pay equity with the General Schedule system. The current system falls short of both these aims.

Moving Expenses. To ensure civilian expertise is available where it's needed, our civilians must be mobile. But relocation costs, especially for housing, are of concern. Many Army civilians are homeowners who consider real estate reimbursement, mortgage rate differentials, and uncertainty about selling their homes to be strong factors in relocation decisions. Although recent congressional adjustments have improved the match against moving costs, further support is needed to resolve the larger issues.

Civilian Substitution Program. The Army has used both civilian substitution and civilianization programs to replace military personnel with civilians. These are completely different. The Army prefers and supports civilian substitution which preserves military end strength through the assignment of released military manpower to other high priorities. Civilianization, on the other hand, reduces military end strength by a corresponding civilian increase. While both programs increase civilian end strength, only substitution preserves military end strength.

In FY 83, 1,000 military positions were converted to civilian positions by substitution. In FY 84, 1,967 and in FY 85 an additional 1,707 (for a total of 4,674) military positions will be converted. A total of 7,920 military positions are programed to be converted through FY 89. The military manpower released through these civilian substitutions provide for critical increases for high priority modernization and readiness programs.

TRAINING TO EXCELLENCE

> "In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military."
>
> - GENERAL DOUGLAS MacARTHUR
> Chief of Staff, U.S. Army
> 1930-1935

TRAINING EXCELLENCE

Tomorrow's battlefields will be more lethal, intense, and complex than ever before. This increased lethality and heightened intensity result from significant technological advances in weapons and target location systems, an accelerated pace of operations necessitating an accelerated decision process, and a much greater density of weapons systems. By way of comparison, George Washington's entire Army had less firepower than a single battalion of today's Army.

Simultaneously the density of manpower at risk on the battlefield has been reduced while the responsibilities accruing to the individual soldier have been increased significantly.

EVOLUTION OF BATTALION AREA OF RESPONSIBILITY

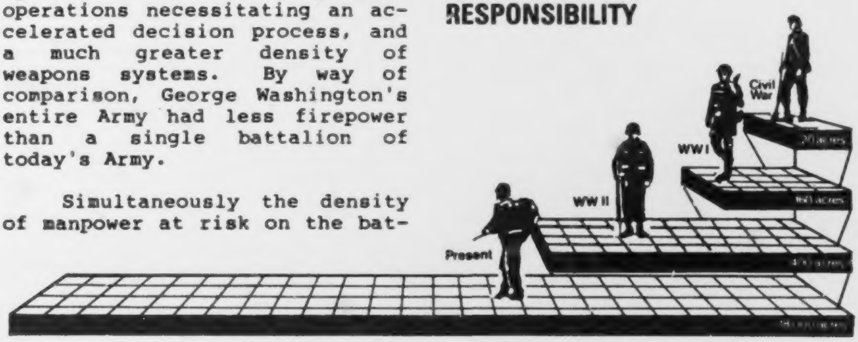


TABLE 3.14

Success on tomorrow's battlefield dictates a peacetime training program in which the individual soldier and the unit are trained to an edge of excellence. Training excellence provides the soldier with the requisite skills and confidence to cut through the confusion of the battlefield and accomplish the mission.

The true test of the quality of Army training programs may be measured best under combat conditions, as in Grenada, and on the fields of training and competition where Army soldiers excelled during the past year. The outstanding success of the Rangers and Paratroopers on Grenada is testimony to the quality of their training and the need for tough, well-trained, well-equipped soldiers who can go anywhere on short notice and win.

It was quality training, superb leadership and superior equipment that enabled U.S. tank companies to finish high company overall, high company CENTAG, and high company NORTHAG in the Annual Canadian Cup Tank Gunnery competition in Europe. This was our best showing in the 20 years of the competition.

INDIVIDUAL TRAINING

During the past year a number of initiatives to improve the training effectiveness of the Total Army were introduced.

Individual Training Evaluation Program (ITEP). ITEP evolved from the Skill Qualification Test (SQT) system and is the foundation of the Army's individual training program. During FY 83 the Army introduced many changes to the SQT system in order to streamline and correct system weaknesses. The revised program incorporates simpler procedures, flexibility and a more comprehensive measure of skill level proficiency. The program provides rapid, useful diagnostic feedback to assess and support individual and, in many cases, collective training in the Army. It is the backbone of individual training in units.

Transition from SQT to ITEP progressed well in FY 83. An extensive education program was delivered to the field. The program now incorporates an informal, local evaluation of task performance and a formal, Army-wide evaluation of individual soldier skill level proficiency.

Under informal evaluation, the field unit commander selects tasks to be evaluated and uses evaluation guides to do hands-on evaluation. The formal evaluation consists of a job specific Skill Qualification Test and a Common Task Test (CTT). A total of 353 SQT in the new format were administered in FY 83. The overall thrust of the Army's efforts in FY 83 was to transition the Skill Qualification Tests and the CTT to be ready for full implementation in FY 84. That mission was successfully accomplished. FY 84 incorporates 615 SQT. In FY 85, 795 SQT are programed for testing.

Evaluation guides to support the commander's evaluation were published as supplements to Soldier's Manuals beginning in FY 83 and are being incorporated into additional Soldier's Manuals as they are revised. Revision of Soldier's Manuals should be completed by the end of FY 86.

The Individual Training Evaluation Program is now achieving those training goals which are vital to individual training in units. It is essential that the momentum be continued and resources made available to support the program. If resources for this program are not provided, individual training in units will be drastically affected, leaders will lose a significant evaluation tool, and unit training will be adversely affected.

Noncommissioned Officer Education System (NCOES). The Noncommissioned Officer Education System is an integrated system of resident training, self-study, and exportable on-the-job material that provides leadership and technical training in support of career progression.

In FY 84 TRADOC will conduct a comprehensive review of the Sergeants Major Academy program of instruction to ensure the course is relevant to jobs being assigned to Sergeants Major. During FY 85, a new senior NCO Academy will be built at Biggs Field, Fort Bliss. The academy will provide the Army with the necessary capacity to train senior operations and intelligence NCO's, First Sergeants, and Sergeants Major.

The Primary Leadership Course (PLC) for combat support (CS) and combat service support (CSS) soldiers and the Primary Noncommissioned Officer Course (PNCOC) for combat arms soldiers are being combined into the Primary Leadership Development Course (PLDC). This will provide standardized instruction in the fundamentals of leadership, responsibility, and authority regardless of military occupational specialty.

The Army needs to train the CS and CSS soldier in the technical skills needed to train and supervise other soldiers on the job. Currently, there are 19 Primary Technical Courses (PTC) and 44 Basic Technical Courses (BTC) serving approximately 290 military occupational specialties. The Army will provide for 98 additional courses between now and FY 86. The FY 85 budget will bring on 42 of these 98 courses.

Reserve Component NCOES will be expanded over the next five years to improve leadership training and to provide increased technical training. A Reserve Component First Sergeants course is under development. A Reserve Component working group continues development of the Primary Leadership Development Course which should be on line in July 1984.

The Army is developing a reclassification training policy that includes mandatory training to the grade/skill level in which the soldier is being reclassified. Modification of existing regulations to support this system is in the planning stage. The Army is studying centralized reclassification management and funding.

Military Qualification Standards (MQS). MQS provides the framework of the entire training program for officers from precommissioning through the 10th year of commissioned service for both the Active and Reserve Components.

The MQS system is designed to train and qualify an officer to perform his/her duties in a given grade and position; it involves the officer, the unit commander, and the service school. MQS identifies specific military tasks an officer must be able to perform, and knowledge areas he must master at a particular grade level. The system involves three distinct areas:

MQS I - Provides standardized branch immaterial training at OCS, West Point, and all ROTC detachments. It requires that each cadet be certified that he or she can perform all military tasks included in MQS I and has met a specified percentage criteria in all military knowledge subjects. MQS I manuals and accompanying training support packages provide the methodology for presenting the training and for ensuring standardization. MQS I manuals will be published in FY 84.

MQS II - Lieutenant Phase. This phase provides the skills and knowledge for initial specialty qualification (Officer Basic Course and unit training). MQS II manuals will be phased in by specialty with the last manuals completed in FY 85.

MQS III - Captain Phase. Continues the broadening and deepening of the captain's professional military education/training (includes Officer Advanced Course). MQS III manual print/distribution is on hold, pending the results of the MQS II pilot test to be completed in FY 84.

The MQS system integrates training an officer receives in resident training and in units. It builds toward Combined Arms and Services Staff School (CAS^3) attendance and prepares the officer for field grade responsibilities.

Combined Arms and Services Staff School (CAS^3). The Army plan is for all officers to attend the Combined Arms and Services Staff School. CAS^3 employs improved training technology and gives intensive on-the-job training in the classroom. It is designed to ensure that all officers who staff units which fight, support, and sustain the battle receive quality training at the right time in their service for the type of job they'll do most in their careers.

CAS^3 consists of two phases. Phase I (non-resident phase) starts on completion of the Advanced Course, and is a 15-module, 142-hour, self-paced course, with a qualifying examination. Phase II (resident phase) is 9 weeks. Students are organized into 12-member staff groups, and learn to develop and present staff studies, staff estimates, briefings, write directives, fact sheets, operation plans and orders.

The Combined Arms and Services Staff School is scheduled to be implemented fully in FY 86. For FY's 84-85 there will be 5 classes of 240 students each (1,200), increasing to 10 classes of 450 each (4,500) in FY 86. The first full officer class to attend CAS[3] will consist of officers commissioned in 1977.

Physical Fitness Training. Even with today's modern weapon systems, it is the servicemen and women who are physically and mentally ready to serve their country who will make the difference in any future conflict. Recognizing that the readiness of the Army begins with the physical fitness of the individual soldier and the NCO's and officers who lead them, the Army continues to emphasize physical fitness initiatives implemented during the past two years.

Physical training programs and weight control measures are producing physically fit soldiers more capable of enduring the stresses of combat. Healthy life styles added to physical fitness produce total fitness. And total fitness is the cornerstone of an Army of Excellence.

Cessation of cigarette smoking, drug and alcohol control, good nutrition, stress modification, and spiritual well-being are the foundation of Total Army fitness. Education and motivation to healthy life-styles in our units and medical facilities are producing positive results.

The Physical Fitness Research Institute has several ongoing projects to include a pilot physical stamina program, a scientific protocol for a Type A Stress Personality Study, a field study at Fort Lewis to measure fatigue and exercise, and various nutritional behavior studies. This War College agency has been tasked to coordinate a Military Scientific Symposium as part of the Olympic Scientific Conference in July 1984.

The Surgeon General has fielded 51 health and advisory teams and has initiated a fitness facilitator course for soldiers at Fort Sam Houston, Texas. Additionally, The Surgeon General is conducting a health risk approval program (fitness for training) with the Fort Leavenworth population.

The Army Staff is conducting a corporate fitness research program designed to identify the causes of and methods for preventing stress. In addition, the Army Staff is examining diet and nutrition items and safer athletic gear for soldiers. The master fitness menu has been modified to reduce soldiers' daily salt, fat and caloric intake. Food management assistance training teams were fielded at 72 installations and trained over 4,900 personnel around the world.

As the body of knowledge of

fitness and health expands, the Army will be at the forefront applying that knowledge to programs we develop for our soldiers. We cannot allow our programs to backslide. Through the 1980's we can expect to see significant advances in our fitness doctrine as well as in the way we promulgate healthy lifestyles. We must continue to provide our soldiers facilities in which they can make these new programs effective.

TRAINING FACILITIES/DEVICES

The National Training Center. The National Training Center (NTC) is providing units with the most rigorous combined arms training experience possible short of actual war, using live fire training and opposing forces in realistic scenarios. In FY 83, 9 brigade rotations (including 1 RC battalion) trained at the NTC. Twelve brigade rotations (including 1 RC battalion) will train in FY 84. The NTC is providing unit commanders with an objective assessment of their unit's training status. Leader training is enhanced through the high stress NTC environment. Data collected at the NTC is providing input to improve training, tactical doctrine and systems employment throughout the Army. Specific feedback to units is improving follow-on home station training. Lessons learned are promulgated throughout the Army to improve training and readiness.

Training Range Modernization. The three primary thrusts of the Army Range Modernization Program are:

-New range designs to meet training requirements created by new systems fielding;

-Upgrade of existing ranges suffering the effects of two decades of under-funding;

-Modernization in response to new and expanded training programs.

In answer to a need to standardize Army ranges and targetry, the $109 million FY 84 program includes the first Multipurpose Range Complexes (MPRC). These ranges are the keystone of a new family of multipurpose facilities. They combine the functions of several ranges and are able to meet both tank (M1 and M60A1-A3) and Bradley Fighting Vehicle gunnery requirements from individual crew/squad through platoon and company. Also to be introduced in FY 84 are prototype ranges designed to support the Army's revised rifle marksmanship training program. Both range types will be fully automated and feature new, advanced targetry.

Fielding of the multipurpose ranges will continue in FY 85. The first "light" multipurpose range for airborne/airmobile/light infantry is also programed. While Army Training Centers begin a full rifle range upgrade in FY 85, the first of these ranges fielded outside the U.S. training base will be built for infantry divisions in Korea and Hawaii. Also programed is a new, standardized Military Operations on Urbanized Terrain (MOUT) training facility. With few exceptions (Fort Bragg and Berlin), MOUT training throughout the Army is seriously deficient. Existing facilities are obsolete and support primarily individual soldier skills. The new two-site design will feature a MOUT Assault Course for teaching basic urban combat skills to soldiers and squads, and a Collective Training Facility (CTF) to support platoon, company and battalion force-on-force exercises.

On the horizon, a laser target interface will allow repetitive range gunnery training with present Multiple Integrated Laser Engagement System (MILES) equipment before transitioning to live ammunition. Later fielding of a MILES-compatible precision laser will greatly increase the training value of these surrogate exercises.

Range modernization is driven by force modernization. It takes a well-trained crew to transform a new system's increased design "potential" into an increased performance "capability." This cannot occur on a range or training facility constructed to meet equipment characteristics and training programs of 20 years ago.

Training Devices and Simulators. Increasing constraints on the availability of training resources (e.g., time, people, fuel, ammunition, repair parts) adversely affect training. Advances in training technology (e.g., lasers, videodisc, computer generated imagery) are being exploited to overcome these training detractors and to improve the efficiency and overall effectiveness of training.

The Army intends to expand its use of training devices and simulators. For example, during FY 85 the M1 tank Unit Conduct of Fire Trainer (UCOFT), the AH-64 Attack Helicopter Combat Mission Simulator (CMS), the Army Training Battle Simulation System (ARTBASS), the MILES Air-Ground/Air Defense Engagement System (AGES/AD) and the Automatic Weapons Effects Simulation System (AWESS) will be introduced. Additionally, the Standards in Training Commission (STRAC) weapon training strategies will be validated and implemented Army-wide. The integration of devices and simulators into approved marksmanship and gunnery programs will permit more efficient use of training ammunition, freeing additional resources for advanced gunnery and combined arms live-fire exercises. The effort for developing and fielding such devices must and will be accelerated.

The FY 85 budget will allow the Army to conduct necessary research and development in our most critical training device requirements, including precision gunnery, field artillery crew training, and signals intelligence operator and maintainer training. It will also allow procurement of a variety of devices whose development is complete. The Army is committed to exploiting advanced technology in support of cost-effective training. In order to maintain our mission readiness through training, the full support of training devices and simulators is essential.

RESERVE COMPONENTS TRAINING PROGRAM

The Reserve Components Noncommissioned Officer Education System (RCNCOES) offers courses for combat, combat support, and combat service support personnel. Participation in Reserve Component NCO Education System programs increased from 12,900 in FY 81 to 13,700 in FY 82 when, for the first time, $2 million was specifically budgeted for the program. Over 17,000 personnel will graduate from these programs in FY 83. The FY 85 budget includes increased funding for RCNCOES programs providing additional opportunities for Reserve Component NCO's to improve their military education and professional development. Indications from commanders and senior NCO's are that these programs have contributed significantly to the overall readiness posture of Reserve Component units.

The Key Personnel Upgrade Program, initiated in FY 81, provides opportunities for development of key personnel through direct association with Active Component counterparts during tactical training exercises.

The Army CAPSTONE Program provides Reserve Component commanders with their wartime organization and allows them to plan and train toward their wartime mission. The FY 85 budget provides funding to support attendance by Reserve Component commanders at conferences with CAPSTONE aligned units to exchange information, refine operation plans, and identify training requirements.

Training for RC units at the National Training Center (NTC), begun in FY 83, provides a unique opportunity to execute missions for which they have trained at home stations. Future plans provide for training at the center for one National Guard roundout battalion in FY 84 and five more in FY 85.

Overseas Deployment Training (ODT), begun in 1976, provides high priority Reserve Component units the opportunity to train in their contingency area with their wartime gaining command. A five-year plan has been developed which programs high priority units for ODT through 1988 and provides these units the opportunity to train in their probable contingency area.

FIELD EXERCISES

Execution of war plans and contingency operations in peacetime training exercises and realistic environments is essential to ensure the combat readiness of Army forces. Army participation in JCS exercises demonstrates to our allies and potential adversaries the capability and willingness of the U.S. to deploy rapidly in a crisis situation. In addition, the exercise program provides realistic and mission-oriented training.

The scope of these exercises is determined by the objectives assigned in the JCS

Exercise Planning Guidance. These objectives reflect force capabilities required by the Defense Guidance and the Joint Strategic Capability Plan, balanced against a CINC's assessment of his war-fighting capabilities. Accomplishment of assigned objectives during joint/combined exercises ensures that Army forces are fully capable of executing assigned missions.

During REFORGER, for example, approximately 12,700 Active and 3,300 Reserve Component personnel were deployed from CONUS to Europe. This deployment demonstrated a capability and resolve to meet the NATO Treaty obligations. Team Spirit involved 41,000 servicemen and women and their equipment in a test of our capabilities in the Pacific. This Korean deployment not only accomplished directed objectives, but it also provided a valuable opportunity to train in a country we are pledged to defend.

Other examples of Army forces taking advantage of rare training opportunities offered by joint/combined exercises in varied environments are Big Pine II (Honduras) and Bright Star 83 (Egypt, Sudan, and Somalia). Big Pine II lasted six months and allowed Army units to train with Honduran counterparts in fire support, engineer construction, and counterinsurgency warfare. Bright Star 83 emphasized independent armor operations and included an airborne assault exercise, as well as unconventional warfare training.

Not only did Big Pine II and Bright Star 83 offer unparalleled training opportunities and expanded operational familiarity in critical geographical areas, the exercises also served the national interest by strengthening bonds with friendly nations and reassuring them of continued U.S. national resolve as a valuable security partner.

The JCS exercises are comprehensive and worldwide. There are ten directed and 32 coordinated exercises in FY 84 and 12 directed and 37 coordinated in FY 85.

MODERNIZING AND EQUIPPING THE ARMY

> "Only when our arms are sufficient beyond doubt
> can we be certain that they will never be employed."
>
> - PRESIDENT JOHN F. KENNEDY
> Inaugural Address, 1961

The combat readiness of today's Army continues to improve through our comprehensive program to modernize the total force. The first-to-fight, first-to-be-equipped philosophy applies to prioritization of both Active and Reserve Components in our efforts to overcome the equipment shortfalls of the past. We are seeing results. Both in Europe and Korea, our readiness posture continues to improve.

Reserve Component units have become increasingly prominent in contingency plans. Many are scheduled for early deployment while others, through the Army roundout program, would deploy with the Active Army unit they round out.

This increased reliance has resulted in higher priorities commensurate with their deployment schedules. For this reason, during FY 83 we saw RC units such as 2/252d Armor Battalion, North Carolina Army National Guard, receiving M1 Abrams tanks and Bradley fighting vehicles before many Active Component units.

The modernization effort has significantly improved our capabilities on the battlefield. We are equipping our soldiers with the best equipment available in the world today.

An important part of our on-going modernization effort is a program to distribute displaced equipment. Later deploying units are receiving equipment that has been replaced in high priority units by new systems. As a result, units which have remained low on the priority list are now receiving first line, often product-improved and fully combat-ready equipment.

The equipment upgrade program was initiated to provide a way to improve allied and friendly nations as well as the Reserve Components and Active Forces. The program is designed to apply state-of-the-art technology to older U.S. origin equipment. The FY 85 development program includes improved armor protection for tanks and armored personnel carriers, better hand-held night-vision devices and ammunition improvements.

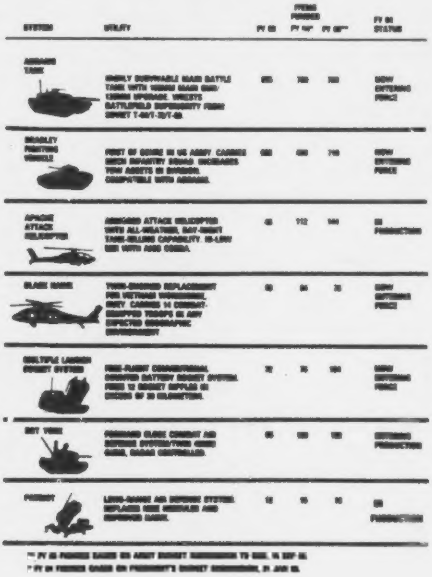


TABLE 3.15

In total, we have an improved Army, better in every respect from the Army of the 1970's. The continuation of our current modernization program and the enhanced capabilities of the Reserve Components are necessary to continue our momentum.

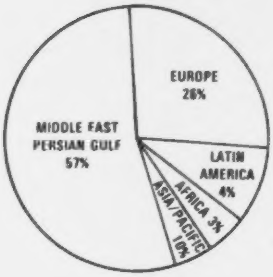
Modernization efforts are also directed toward friendly and allied nations through the Army's Foreign Military Sales (FMS) Program. In FY 83, 1,484 new FMS cases valued at $3.9 billion provided Army materiel, training and services to 71 countries. Many of these countries are also upgrading older equipment by application of product improvements incorporating modern technology.

The most visible example of this is the conversion of early model 90mm gun M48 tanks to the latest 105mm gun M48A5 configuration.

Diversions of equipment from the Army inventory to meet FMS emergency requirements have enhanced the capability of critical friendly and allied countries to defend themselves. The effect on the Army has been offset by the increased capability and by the continued operation of valuable mobilization production lines. Future equipment diversions to FMS will be reduced through the use of the Special Defense Acquisition Fund which will procure materiel in anticipation of foreign military sales. For this reason the Army supports full congressional allocation of the Special Defense Acquisition Fund.

SECURITY ASSISTANCE BY STRATEGIC OBJECTIVES

FY84 SECURITY ASSISTANCE
BUDGET REQUEST



FY85 ARMY RECOMMENDED
SECURITY ASSISTANCE PROGRAM

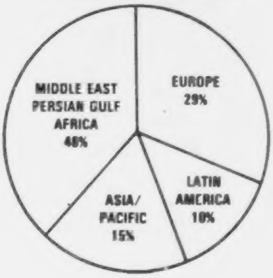


TABLE 3.16

The U.S. Army Development and Employment Agency (ADEA) was established in April 1983 as a field operating agency of Headquarters, Department of the Army, replacing the High Technology Test Bed (HTTB). ADEA's mission is to identify, evaluate, and expedite operational concepts, organizations, and materiel requirements which improve the combat power, deployability, and sustainability of all Army divisions, concentrating on the light infantry units. ADEA will act as the Army "skunkworks" where new concepts, high technology equipment, and innovative tactics will be explored while continuing to support the transition of the Ninth Infantry Division to a High Technology Motorized Division (HTMD).

The mission of the Ninth Infantry Division, after conversion to the HTMD, will be to deploy rapidly to a contingency area and defeat enemy forces ranging from light infantry to tank or motorized forces. The division is being designed primarily for Southwest Asia, with utility in NATO. Upon completion of the conversion to HTMD, the division will retain part of its organization in a test bed role in support of ADEA and other light and heavy division efforts.

We have discussed the procurement of modern and upgraded equipment from a quantitative point of view. The Army must also field quality systems and products, systems which are not only modern and use the latest technologies, but which work and are reliable once we provide them to the soldiers. A high quality in fielded Army equipment is absolutely required. Actions are being taken to strengthen our quality assurance program to include giving firm notice to industry that product quality is a must. We are negotiating better contracts and are becoming tougher on the enforcement of those contracts. Enforcing quality standards is a must if we are to continue to provide our soldiers with the best equipment American industry can produce.

The remainder of this section provides highlights of the Army's research, development and acquisition effort, illustrating the direction and importance of our equipment modernization programs. Systems are grouped according to their battlefield function as either close combat, fire support, air defense, combat support, combat service support, or command and control.

CLOSE COMBAT

M1 Abrams Tank. As of November 1983, 1,489 M1 tanks have been produced and eleven battalions have been fielded (seven in USAREUR and four in CONUS). Concurrently, POMCUS (prepositioning of materiel configured to unit sets) is being filled, and in consonance with the Army's first to fight concept, a National Guard battalion has already received its M1's.

Field performance of the M1 Abrams tank has been impressive. General Otis, the Army's European Commander in Chief, recently praised the performance of the 53 M1's that participated in the REFORGER 83 exercise. He made the following specific observations: all M1's were operational at the end of the exercise and a 98 percent operational readiness rate was demonstrated over the 11-day period. The increased speed, cross-country mobility, target acquisition, and night-fighting capabilities provided the M1 units marked advantages over opposing forces. As in REFORGER 82, the M1 Abrams tank demonstrated that it was the best tank on the battlefield.

M1 ABRAMS TANK

The M1 program will total 7,058 tanks; roughly half will be M1's (105mm main gun) and half M1E1's. The M1E1 tank is scheduled to begin production in August 1985. It is an evolutionary improvement of the M1 series tank which incorporates the German designed 120mm smoothbore gun, armor modification, and a nuclear-biological-chemical overpressure system. Production of the M1E1 model will run through 1991.

The first production deliveries of ammunition to support the fielding of the 120mm M1E1 tank will occur in FY 85. These deliveries will culminate efforts begun in FY 79 to transfer and produce West German 120mm weapons system technology. The 120mm system significantly increases the capability of the Army's armor forces. Continued funding will ensure uninterrupted production of ammunition to support training requirements and an adequate stockpile of war reserve assets.

Bradley Fighting Vehicle. The Bradley vehicles complement the Abrams tank and provide the infantry and cavalry with a high density of TOW (tube-launched, optically-tracked, wire-guided) antitank systems and the lethal firepower of a 25mm cannon. Bradleys allow our mechanized forces to maneuver and fight both night and day and provide overwatching fires while on the move. Current qualitative improvements will allow the Bradley crewman to engage targets in a jamming environment and on an obscured battlefield.

BRADLEY FIGHTING VEHICLE

Bradleys have been fielded in three mechanized battalions, two in CONUS and one in Europe. The FY 85 budget will increase the production rate from 50 to 75 vehicles per month providing more economical and efficient production.

AH-64 Apache Advanced Attack Helicopter. The Apache is a quick-reacting, airborne antitank weapon. Variations in terrain and the unfavorable balance in armor dictate a need for an antiarmor system that can quickly move to the heaviest enemy penetration and destroy, disrupt, or delay the attack long enough for friendly armor and ground units to reach the scene. The Apache is designed to meet this requirement and survive. It is equipped with target acquisition and night vision sensors which permit its two-man crew to navigate and attack in darkness and in adverse weather conditions. The Apache also has a 30mm chain gun and 2.75-inch rockets that are lethal against other targets. In the late 1980's, the Apache will be the Army's primary attack helicopter.

Production of the Army's attack helicopter is well underway. The first aircraft rolled off the Mesa, Arizona final assembly line ahead of schedule, and will be delivered to the Army in 1984. During FY 85, the assembly line will reach a production rate of 12 Apaches per month. This production rate provides the Active Force with Apaches in a timely manner and is an efficient use of available funding.

Hellfire. Hellfire is a laser guided missile, and is the primary antitank weapon for the Apache attack helicopter. Hellfire homes on a laser spot that can be projected from a number of sources including ground observers and other aircraft as well as the launching aircraft itself. This enables the Apache to launch its missiles indirectly, in some situations without even seeing the target. The Apache can carry up to 16 Hellfire missiles.

APACHE FIRING HELLFIRE

Army Helicopter Improvement Program. Since the early 1970's, the Army has required an improved scout helicopter which would not only be survivable in combat, but would be capable of operating under conditions of darkness and adverse weather, anywhere the Army may be called upon to fight. The Army Helicopter Improvement Program (AHIP) Scout will be the Army's first true scout helicopter capable of meeting this need.

The AHIP Scout will provide significant enhancement to the command and control, surveillance, reconnaissance, and target acquisition/designation capabilities of attack helicopters, air cavalry and field artillery units. A modification of the earlier model scout helicopter, it will be equipped with sensors mounted above the rotor system to reduce detectability and increase standoff range from threat weapons systems. Its laser designator will permit pinpoint target location and adjustment of conventional artillery fire as well as guidance of precision munitions such as Hellfire and Copperhead. This will improve scout/attack team survivability by allowing the Apache to launch missiles from concealed firing positions.

Antitank Missiles. The soldier in the field is now receiving TOW-2, an excellent example of evolutionary development to meet the future threat. TOW-2 provides a potent long range (3,750 meters) antiarmor weapon for the Bradley Fighting Vehicle, as well as vehicle mounted and ground launchers.

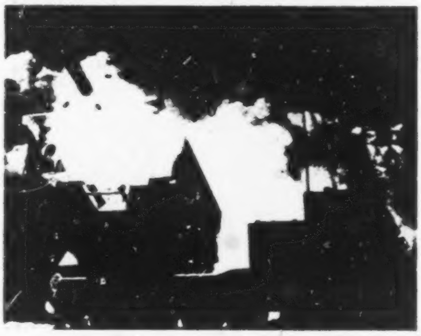
Dragon is currently our mid-range (1,000 meters) antitank weapon. It is no longer produced but will remain in service until we develop an advanced antitank weapon system as a replacement. The new system is expected to begin development in FY 85.

Small Arms. The M16A2 rifle, which is currently being procured by the U.S. Marine Corps, will be bought by the Army starting in FY 85. The rifle will be issued initially to the front line combat soldier. The M16A1 will continue to be the standard rifle for the remainder of the Army and will be replaced only as needed. The M16A2 incorporates improvements in sights, pistol grip, stock, and overall combat effectiveness. The maximum effective range is increased from 460 to 800 meters. Its accuracy is enhanced by incorporating an improved muzzle compensator, three-round burst control, a heavier barrel and the capability to use NATO standard ammunition.

The U.S. Army is currently testing a 9mm handgun. The handgun selected will be procured as the standard for all the services. The goal is to eliminate the current proliferation of handguns in the services and to ensure standardization of 9mm ammunition with our NATO allies. A contract will be awarded in FY 85. The reliability and performance of the 9mm handgun is required to be better than the .45. Characteristics of the handgun will include double action, a higher magazine capacity and better safety mechanisms than the .45.

FIRE SUPPORT

Multiple Launch Rocket System (MLRS). Army field units are now receiving MLRS. This system provides them with a free-flight. area fire rocket system with vastly increased range and indirect firepower capabilities for attacking time-sensitive targets, such as enemy field artillery and air defense positions. Fielding of this system follows an accelerated development schedule with intense operational testing. The system's multiyear procurement contract could achieve savings of over $200 million. Cost advantages also result from a NATO cooperative development and production program with Germany, France, the United Kingdom, and Italy. Enhanced combat effectiveness of NATO forces is achieved through procurement of a common system.



MLRS

M109A2/A3 Howitzer. The Army is requesting $52.4 million for 70 M109A2 howitzers in FY 85. With what has been procured in 1984 and prior years, there will be 2,426 diesel powered, self-propelled M109 series howitzers in the force.

The M109A2/A3 howitzer is a product-improved version of the basic M109 self-propelled 155mm howitzer that was fielded in 1963. The M109A2 is a new production howitzer. The M109A3 is a depot conversion from the M109A1 configuration and is equivalent to an M109A2. The howitzer can fire to a range of 24 kilometers with rocket-assisted projectiles and is capable of delivering a nuclear round.

The Army continues to improve the M109 and in FY 85 will procure additional modification kits. The modification kits provide 25 improvements in the areas of reliability, availability, survivability and nuclear-biological-chemical (NBC) protection.

Field Artillery Ammunition Support Vehicle (FAASV). The Army has an urgent requirement to replace the unarmored M548 ammunition carriers now deployed in artillery battalions in Europe. The FAASV is a fully-tracked, self-propelled armored vehicle designed to carry 155mm and 8-inch ammunition. It has a conveyor belt for moving projectiles and propellant charges from the vehicle to the breech of the howitzer. The Army is requesting 170 vehicles for $84.2 million in FY 85.

Copperhead. Copperhead is a 155mm precision-guided artillery projectile designed to destroy stationary and hard point targets such as armored vehicles and bunkers beyond direct fire weapons range. Copperhead has demonstrated a reliability greater than the OSD requirement of 80 percent. Our current plan is to buy 2,253 more rounds in FY 85 and complete procurement in FY 91 having bought over 30,142 rounds. Additionally, efforts are underway to enhance Copperhead's performance with a microprocessor that will reduce cost and will enhance the projectile's performance against countermeasures.

155-Howitzer Nuclear Projectile (W82). This program is being readdressed as a key element in the modernization of our tactical nuclear forces. In combination with 8-inch cannon and Lance missile systems, it will represent a significant portion of NATO's deterrent capability.

Actions are currently ongoing to seek congressional approval of continuing research and development pending completion of several directed study efforts.

Fire Support Team Vehicle (FISTV) Modification Kits. FY 85 will be the third year of procurement of FISTV modification kits. The FISTV provides mobility and protection against small arms and fragmenting artillery for fire support team personnel and equipment. When equipped with the Ground Locator Laser Designator, the system will allow surveillance, target acquisition, target laser designation, position location and communications while mounted and dismounted.

AIR DEFENSE SYSTEMS

Patriot Air Defense Missile System. The deployment of the Patriot Air Defense Missile System opens a new era for air defense. Its high firepower, fast reaction, and ability to operate in a severe electronic counter-measure environment are features not previously available, but necessary for effecttive air defense. The system's design will ease the field logistic burden since its overall performance is achieved with less equipment, less operational manpower, and with extensive built-in test equipment.

PATRIOT

The first battalion, which has the mission of training subsequent units, has achieved operational capability at Fort Bliss, Texas. Patriot is being deployed by using a milestone driven schedule under which specific events have to be satisfactorily accomplished prior to proceeding to the next milestone. This approach assures that equipment, training, and support are sufficiently mature before Patriot reaches Europe. The FY 85 budget includes funding for continued production.

The SGT York Division Air Defense Gun. SGT York provides critical organic air defense protection for the forward elements of our maneuver forces. It is the only all-weather, short-range air defense system currently being procured for the Army. The system possesses the reaction time, range and lethality necessary to defeat the armed helicopter threat. The SGT York gun was developed using an accelerated, unconventional acquisition approach designed to achieve initial deployment in the minimum possible time at an affordable cost. The Army intends to procure a total of 618 fire units with 132 planned in FY 85.

Chaparral. Chaparral is a self-propelled, passive infrared homing, short-range air defense missile system first fielded in 1969. It will remain in the Army inventory through the 1990's. On-going product improvements will enable Chaparral to counter the threat. Chaparral will be provided to the National Guard beginning in 1984.

Product Improved Vulcan Air Defense System (PIVADS). Product improvements to the Vulcan air defense system will provide the system with increased effectiveness and improved reliability and maintainability. These modifications will improve the air defense capabilities of our Reserve Component and Active Component light forces. Army intentions are to modify all 600 systems currently in the inventory. Planned procurement in FY 85 is for 241 modification kits.

ROLAND. ROLAND is an all-weather air defense weapon system designed to protect troops and other battlefield targets against low altitude air attack. Activation of the Army's only ROLAND battalion in the New Mexico Army National Guard in FY 84 marks the first time that the National Guard has received a new weapons system not previously fielded by the Active Army.

Stinger. The Stinger manportable air defense system provides a self-defense capability to small combat units in the main battle area. The basic Stinger missile was initially fielded in 1981 as a replacement for the Redeye system. Development of the Stinger-POST began in 1977 to upgrade the capability of the basic Stinger in a countermeasures environment. Stinger-POST tactical deliveries begin in February 1987. The Stinger-POST RMP (reprogramable microprocessor) is an advanced version of the Stinger-POST which will provide a capability for rapid upgrade as the threat evolves. The Army intends to procure 2,360 Stinger-POST systems in FY 85.

COMBAT SUPPORT

Chemical Defense Preparedness. Our chemical defense readiness has been substantially improved by providing more protective equipment, expanding our decontamination capability, and continuing our training emphasis. FY 85 continues this progress.

Chemical Retaliatory Capability. The United States' chemical retaliatory capability is inadequate due to its age, configuration, and composition. Only 10 percent is ready for issue. Chemical retaliation capability is essential as a deterrent.

The binary modernization program establishes the credible deterrent we need. The Army has requested funds to initiate procurement of long-lead items for the 155mm binary chemical projectile in the FY 85 budget. This gives land forces the immediate and responsive short-range capability they need.

Remotely Monitored Battlefield Sensor System (REMBASS). REMBASS is a system of seismic/acoustic, magnetic and infrared sensors that are hand-emplaced and remotely monitored. With the use of associated radio relay equipment, REMBASS is designed to detect and classify the movement of personnel and vehicles out to 100 kilometers. It provides the tactical commander with a forward area early warning/surveillance, rear area intrusion, and target development capability.

COMBAT SERVICE SUPPORT

UH-60A Black Hawk. The Army's UH-60A Black Hawk is being fielded in selected units to meet the needs of our combat forces for a helicopter with increased payload, improved maintainability, reliability, survivability, and performance. The Black Hawk is a battlefield tested success story. In Grenada our new helicopters were able to withstand fierce anti-aircraft fire. One Black Hawk had 45 bullet holes, punctured fuel tanks, holes in the tail and main rotors, much of the control instrumentation destroyed, and five people, including the pilot, wounded. Yet the crew completed their mission. Good technology wins battles and saves lives.

The UH-60A is in its eighth year of production, and 445 UH-60A's have been delivered to the Army as of 31 October 1983. The UH-60A is presently being procured with a FY 82-84 multiyear procurement contract. Because the production base is stable, multiyear procurement has produced substantial savings. The Army is proposing a follow-on multiyear procurement for FY's 85-87. The program continues toward meeting the procurement objective of 1,107 aircraft.

Wheeled Vehicle Fleet. In October 1980 the Army forwarded its zero-based "Tactical Wheeled Vehicle Fleet Requirements Study" to Congress. Using this set of requirements as a base, the Army has developed a plan to:

- Update the light load vehicle fleet with the new, complementary High Mobility Multipurpose Wheeled Vehicle (HMMWV) and Commercial Utility and Cargo Vehicle (CUCV).

- Update and augment the 5-ton fleet with a new, product-improved 5-ton truck.

- Improve the heavy load fleet with the new 10-ton Heavy Expanded Mobility Tactical Truck (HEMTT).

In FY 83, the Army signed a five-year multiyear contract for the HMMWV's and saw the roll out of the first CUCV production vehicles. Both of these vehicles are multiservice programs. In FY 84, the Army will continue to field the new CUCV and improved 5-ton truck while full initial operational capability for the HMMWV and HEMMT is scheduled for FY 85. When the 5-ton multiyear contract ends in FY 85, the Army plans to initiate a new multiyear competitive procurement bidding. Beyond FY 85, the Army's goal will continue to be filling unit shortages and replacing overage equipment with a tactical wheeled vehicle fleet that demonstrates the required performance and efficiency necessary to sustain and support tomorrow's Army of Excellence.

Other Support Equipment. A host of other less glamorous but equally essential equipment will be procured in FY 85 to modernize and improve the Army's support capability. Commercial and administrative vehicles, for example, will be purchased to replace a portion of the aging non-tactical vehicle fleet. A logistics support vessel, watercraft and railcars will be procured to improve our capability to transport, off load and distribute materiel. Finally, much needed water support and fuel distribution equipment will also be purchased. These are but a few examples to demonstrate Army plans to modernize all aspects of combat service support.

COMMAND AND CONTROL

Single Channel Ground and Airborne Radio System (SINCGARS). SINCGARS is the Army's new generation of single-channel VHF/FM combat net radios designed to furnish secure voice or data communications in a hostile electronic warfare environment. Antijam is provided through the use of a sophisticated electronic countermeasure known as frequency hopping. The radio is provided in seven different configurations ranging from a lightweight manpack to a vehicular long-range version. SINCGARS is designed for high field reliability and simplicity of operation and maintenance. It will replace the Army's aging and outdated inventory of combat net radios. Initial field capability is planned for FY 86.

Position Location Reporting System (PLRS). The Position Location Reporting System (PLRS) is a joint Army/Marine Corps development that will provide combat commanders with near-real time identification and location of equipped forces on the battlefield, regardless of terrain or weather. The Army is merging PLRS with the Joint Tactical Information Distribution System (JTIDS) to form the Army Data Distribution System (ADDS), an automatic tactical data distribution system capable of meeting near-real time data communications requirements in support of an automated battlefield. The initial fielding of ADDS is planned for 1988.

Joint Tactical Communications Program (TRI-TAC). The majority of Army tactical communications systems in the field today employ slow, manual, manpower intensive, obsolete, non-secure equipment. This equipment employs outdated techniques and cannot be upgraded to exploit modern techniques that provide more effective, reliable service with fewer operators. The Army is exploiting the technological advances made in the computer and digital communications fields for the development and acquisition of tactical communications systems under the TRI-TAC program.

SUMMARY

The systems discussed throughout this section derive significant capabilities from a vigorous Army technology base. High survivability armor for the Abrams tank; an all-weather target acquisition system on the Apache; advanced radars on Patriot and SGT York; and robust new command, control, communications and intelligence products all reflect contributions from a healthy Army laboratory system and orderly transfer of technology from concepts to systems. In order to sustain the levels of excellence achieved in the Army during the past three years, this technology base must be expanded and continually revitalized if we are to counter tomorrow's threat.

MOBILIZING AND DEPLOYING THE ARMY

> "Victory is the beautiful, bright-colored flower. Transport is the stem without which it could never have blossomed."
>
> - WINSTON CHURCHILL

The Army's mobilization objective is to be postured in peacetime to facilitate rapid deployment in war. The training base, personnel, support systems, and equipment required to accept and train soldiers must be identified and immediately available to meet the mobilization surge. Improving and refining our mobilization capacity is an important peacetime mission for the Army.

The Army's capability to mobilize should improve during FY 85 primarily through improvements in Reserve Component management and full-time unit support, the mobilization base (which includes the training base), and the industrial base.

In recent years, increasing reliance has been placed upon the Reserve Components with the addition of early deploying missions. ARNG and USAR units, to include major combat units, have been identified in FY 84 for critical missions in the Rapid Deployment Force (RDF), roundout, POMCUS and theater defense categories. Expansion of the RC role to meet early deploying missions will continue in FY 85.

Reserve Component mobilization capability has also improved by expanding the CAPSTONE program to include Korea and the CONUS sustaining base. The development and implementation of the Continental Army Management Information System (CAMIS) has also been accomplished. Additional improvements have been made to the mobilization automation system for reserve management and for mobilization expansion.

Mobilization planning has been enhanced at all levels by adding planners to CONUS base commands and installations. Programs initiated in FY 82 for the expansion of the mobilization training base will continue in FY 85, including purchase of war reserve stocks of individual clothing and equipment and modest improvements in the acquisition of major end items for the training base. Resources are provided for initiating construction of facilities to support base expansion upon mobilization.

Mobilization exercises are designed to evaluate, correct deficiencies, and improve the mobilization preparedness and readiness of both Active and Reserve units. These exercises provide valuable, dedicated time for units to train solely on mobilization tasks. In FY 85, over 350 mobilization exercises will be conducted, completing the first phase of the program in which each of the early deploying units will have participated in a mobilization readiness exercise.

The Army continues to identify and correct deficiencies in the capability of CONUS installations to outload early deploying and mobilizing units. This capability will enable these units to meet required closure dates at ports of embarkation. The Army program is designed to correct such deficiencies as deteriorated installation rail trackage, inadequate blocking and bracing materiel stocks, and insufficient loading facilities such as end ramps and marshalling areas.

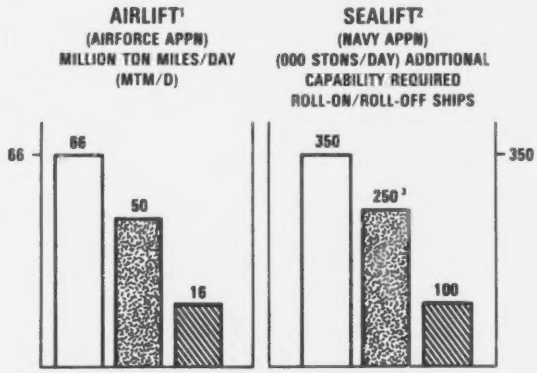
Major outloading deficiencies at most Third U. S. Army deployment installations are now being corrected. The Army FY 85-89 program extends this effort to the remaining deployment installations and the mobilization base depots, home stations and mobilization stations. Over $44 million is programed through FY 89 for this effort; however, nearly $100 million additional funding is required through FY 90 to correct identified deficiencies.

Essential to our mobilization mission is a comprehensive command and control structure to oversee the timely movement of critical resources. Planned modernization of the Worldwide Military Command and Control System (WWMCCS) facilities is designed to provide this capability. Continued enhancement of command and control systems between deployment agencies and improvements to the Army WWMCCS Information System (AWIS), Defense Satellite Communications System (DSCS) and Tactical Area Communications Systems will begin in FY 85.

Strategic mobility continues to be one of the Army's primary concerns. The Army is unique in that it must rely on its sister services, the Air Force and the Navy, to meet its global deployment commitments. Despite recent notable improvements in our air and sealift capabilities, substantial shortfalls continue to exist for both inter- and intra-theater requirements. Even with the Army's programs for prepositioning equipment, there are significant shortfalls in our ability to project the force and sustain it in combat.

For example, our current requirement is to reinforce NATO with 10 divisions in 10 days. Strategic lift shortfalls limit our capability to only six divisions in 10 days. To meet current deployment objectives in Southwest Asia, we should be able to move several divisions in six weeks. Again, the strategic lift reality is that only one division can be delivered in that time frame. The plain fact is that significant numbers of aircraft and ships are needed to move Army ground forces. The total lift need becomes even greater as distances to theaters of operations increase. Table 3.17 depicts the current airlift and sealift shortfalls.

STRATEGIC AIRLIFT AND SEALIFT SHORTFALLS



LEGEND: ☐ = REQUIREMENT, ▩ = PROGRAM, ▨ = SHORTFALL
REQUIREMENT SOURCE: CONGRESSIONAL MANDATED MOBILITY STUDY AND DOD SEALIFT STUDY.

NOTES:

1. CURRENT AIRLIFT PROGRAM INCLUDES C-5B AND KC-10 PROCUREMENT.
2. CURRENT SEALIFT PROGRAM INCLUDES SL-7 CONVERSION, FLATRACK/SEASHED PROCUREMENT AND RRF EXPANSION.
3. THERE ARE NO FUNDS IN THE CURRENT NAVY PROGRAM TO PROVIDE ADDITIONAL FAST OR CONVENTIONAL SPEED ROLL-ON/ROLL-OFF SHIPS.

TABLE 3.17

The Army's light division initiative will help decrease our strategic lift shortfall, but even with this effort, our ability to execute a global strategy will remain severely limited. Increased lift capability remains the essential solution to our deployability problem.

Thanks to strong support from both Congress and our sister services, there have been important gains made in improving strategic lift. For example, the Air Force program to improve the utilization rates for Military Airlift Command (MAC) aircraft has increased total airlift capability. Also, gains were achieved as a result of the C141 stretch program and the C5-A wing modification program. The congressional decision to fund procurement of 50 additional C5-B and 44 KC-10 aircraft will further enhance our rapid, early-on, force projection capability. However, intra-theater airlift capability will remain inadequate, especially for outsized cargo, until a new intra-theater lifter such as the C-17 is developed and fielded. The Army supports the Air Force's C-17 initiatives.

Acquisition of eight SL-7 containerships by the Navy constituted a major improvement in total sealift capability. Approval of funding for conversion of the SL-7's to roll-on/roll-off configuration represents a commitment to develop the full potential of these fast sealift assets. The conversion of the first four vessels has begun. Funding for conversion of the remaining four was approved in the FY 84 appropriation. We need to press ahead now with further strategic sealift improvements against the known shortfalls recently identified by the DOD Sealift Study.

Moving materiel from the Navy vessels offshore to the units on the ground is another vital aspect of deployability. In this regard, the Army has the mission of providing logistics-over-the-shore (LOTS) support to U.S. Central Command; and, here again serious shortfalls exist. Near-term Army LOTS capability has been improved by fielding of the first LACV-30 company, and it will be further improved when the second company is activated in October 1984. The FY 85 budget provides for continued enhancement of our LOTS capability and enables us to procure landing craft, pier barges and a logistics support vessel.

A comprehensive modernization program for the Army watercraft fleet is currently underway and is being refined based on the findings of the DOD Sealift Study. We are working closely with the Navy to identify new types of cargo discharge equipment such as causeways and roll-on/roll-off discharge facilities that will enhance our total LOTS capability.

To alleviate some of our strategic mobility shortfalls and to improve our ability to deploy forces rapidly, the Army has initiated land and sea based prepositioning programs.

These programs assist in meeting deployment objectives by reducing demands for strategic airlift and sealift as well as the time it takes to move forces to a particular region. Prepositioning also provides for improved sustainment of early deploying forces.

Much more needs to be done beyond FY 85 to reduce deployability shortfalls. The SL-7's, while a good start, do not fully close the gap between sealift requirements and capabilities. Additional aircraft beyond the planned C5-B and KC-10 buy are also needed. Further, our LOTS program is on the right track but falls short of being where it should be. These are the conditions which give rise to our concerns. These concerns may be compounded if the on-going DOD Worldwide Intratheater Mobility Study identifies additional lift requirements.

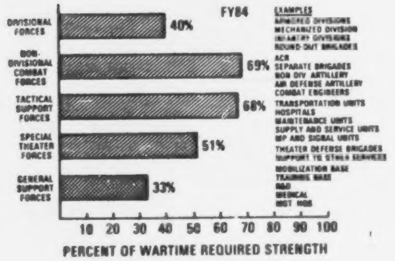
SUSTAINING THE FORCE

> "Without supplies no Army is brave."
>
> - FREDERICK THE GREAT

The characteristics of modern military forces and the changing nature of land warfare dramatically accelerate the anticipated rates of battlefield consumption and attrition. In addition, the threats we face provide potential for conflict beginning with counterterrorism at the low end of the spectrum to nuclear warfare at the high end. These conditions challenge our logistics support capabilities like never before. Not only must our logistics systems be able to transport, supply and maintain rapidly, but also they must be flexible enough to accomplish these requirements in a host of potential battlefield scenarios.

To meet this challenge, logistics support is being modernized and reshaped at the same time we modernize our equipment and reshape our force structure. Our efforts are aimed at reducing the logistics burden, improving productivity and taking advantage of new management techniques and emerging technology. Logistics research and development is being exploited and opportunities for increased roles by host nations, allies and industry are also being examined. Although much remains to be done, the Army is meeting the logistics challenge.

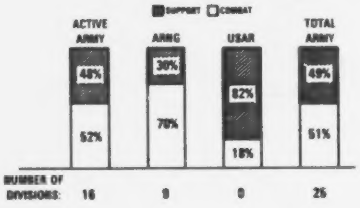
Increasing Reliance on the Reserve Components. The Re-



RESERVE COMPONENT FORCES CONTRIBUTION TO THE TOTAL ARMY FORCE (25 DIVISION)

TABLE 3.18

serve Component units are designed to be compatible with and complementary to the Active Force units. Reserve Component units no longer deploy "after" the Active units but "with" them and in many cases they actually deploy "before" some Active units.

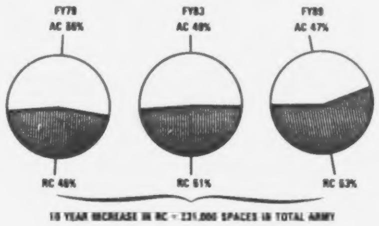


DISTRIBUTION OF FORCE STRUCTURE COMBAT TO SUPPORT

TABLE 3.19

As of FY 84, nine combat divisions (36 percent of the total number of combat divisions) are organized in the National Guard. Two-thirds of the Army's combat service support capability is found in the Reserve Component units. Table 3.18 depicts the RC distribution of force structure in the Total Army during FY 84.

Table 3.20 demonstrates the trend towards increasing reliance on the RC forces since 1979.



AC/RC MIX PERSPECTIVE

TABLE 3.20

Prepositioned War Reserve Stocks. At the outset of hostilities, our combat forces will rely heavily on prepositioned war reserve stocks. These are stocks of major equipment, secondary items, ammunition, fuel and other materiel, which are prepositioned forward in the theaters of operation to sustain the combat effort until the production base can accommodate wartime resupply demands. The lethality of today's battlefield makes it critical that adequate quantities of these stocks be on hand. Prepositioned stocks reduce the initial demands on our strategic air and sealift assets. Among our major short-term objectives are the reduction of ammunition shortages and increases in secondary item stockage levels.

POMCUS. POMCUS is organizational equipment stored in company- and battalion-size packages in a ready-for-issue condition. The purpose of POMCUS is to position the majority of a unit's organizational equipment forward so that in times of crisis only unit personnel, with minimum equipment, will require airlift to Europe. Currently, POMCUS consists of four division sets (DS) of equipment. The Army program is for six division sets. Storage sites for 5 and 6 are currently under construction and are programed for completion in late FY 84-85. Prepositioning for sets 5 and 6 will begin as these sites are completed.

Master Restationing Plan (MRP). Another important burden-sharing initiative currently designed to improve the sustainability of European forces is the MRP. The plan envisions the establishment of three brigade-size bases near the West German-Warsaw Pact border which will both improve the forward deployment of our combat units in Europe and accommodate our force modernization program. The FY 85 budget request includes $36 million for division air defense (DIVAD) battalion facilities in the V Corps area. This will allow a series of unit moves alleviating crowding and optimizing the use of existing facilities.

Ammunition War Reserves. Funds for improving the posture of ammunition war reserve stocks are contained in the FY 85 budget request. These stocks are necessary to support the worldwide commitment of Army land forces with the most modern munitions available for combat systems including tanks, artillery, air defense and attack helicopters.

RDX/HMX Improvements. Funds are requested in FY 85 to improve the current U.S. Research and Department Explosive (RDX) and High Melt Explosives (HMX) mobilization readiness posture. The thrust is to decrease dependence on the present vulnerable sole-source plant in Kingsport, Tennessee through long-term construction of additional plant capacity at multiple sites. The FY 85 budget request initiates development of a new technology HMX Facility, stockpiles RDX/HMX based compositions, and continues efforts to modernize the existing plant.

Secondary Item War Reserves. In FY 85, the Army is requesting $483 million for secondary item war reserves. The request includes stock funds of $210 million for consumable repair parts and personnel support items such as cold weather clothing, body armor, helmets and medical items. In the past, sufficient funds have not been available to reach our goal for these stocks. Although secondary items account for only a small portion of the total dollar value of our war reserve program, shortages of these items can seriously degrade our combat capability.

Depot Maintenance. A comprehensive depot maintenance program is vital to the sustainment and readiness of combat forces. The materiel maintenance element of the program provides an efficient and effective source of supply by returning serviceable major and secondary items directly to user units. Materiel maintenance also supports foreign military sales programs and helps maintain a viable production capability for mobilization requirements. The maintenance support activites aspect is just as important and provides for fielding support for new systems, maintenance engineering, new equipment training and the update and revision of technical publications. The FY 85 budget is tailored to assure the Army of a balanced depot maintenance program, one which continues to provide responsive support for units in the field.

Repair Parts Supply Support. A host of initiatives are underway to improve repair parts supply at both the wholesale and retail levels. One such initiative is the restructuring of Authorized Stockage Lists (ASL) and Prescribed Load Lists (PLL) within the divisions. Army studies begun in 1974 have proven that the number of repair parts stocked at division maintenance battalions and individual units can be significantly reduced with no impact on readiness or sustainability. These reductions are achieved by eliminating non-essential parts and by converting to a new computer stockage model. The payoff is that the same levels of sustainment are achieved with fewer parts, and the divisions are confronted with a greatly reduced logistics burden. Both ASL's and PLL's are restructured to provide sufficient depth and breadth of parts to support maintenance operations under combat conditions. After restructuring, divisions will be able to transport authorized parts with organic transportation more easily. The Army will continue these types of initiatives in FY 85 as it strives to modernize all aspects of logistics support.

Tactical Water Support. Tactical water support is a critical element of sustainability. Resources are required to provide water detection, production, treatment, storage, distribution, cooling and force structure support to Central Command forces in an arid environment. Equipment requirements have been determined and funds have been programed to support the expanded Central Command force.

Equipment procured with prior year funds is being delivered and will be used to establish a training program at the NTC to fill TOE units' stocks, to fill FORSCOM operational project stocks in support of Central Command, and to establish a training base for exercises.

The Army, as DOD Executive Agent for land-based water resources in contingency operations, has developed, in close cooperation with other services and applicable DOD agencies, concepts and doctrine for water support. Additionally, Army units received valuable water support experience and training during operations in support of Big Pines II.

Bulk Petroleum Distribution. Distribution of bulk petroleum is one of the most critical elements of readiness and sustainability. The Army is responsible for the inland distribution of bulk petroleum, oil, and lubricants (POL) to all services. The Army's mission is to maintain a flow of bulk fuels from a combination of off-shore/pier-side tanker discharge systems through a network of on-shore storage and distribution systems.

We have programed funds to improve petroleum discharge over-the-shore and inland distribution capabilities and to modernize petroleum systems by taking advantage of technological advances in petroleum distribution equipment. The Army's efforts to improve and modernize petroleum distribution capabilities will improve our readiness to meet the ever increasing bulk petroleum distribution requirements of all services.

The Industrial Base. Sustainability issues concern manpower, war material stockpiles, and the mobilization capacity of the industrial base. We must identify how much we need, what we can afford, and what investment policy we should pursue to achieve our requirements. The Army has evaluated industrial base capability for surge, sustainability and mobilization. The evaluation showed that our industrial production base could reach mobilization production rates in approximately two years for such systems as the Abrams tank and selected types of 155mm artillery rounds. More than one year would be required to reach surge production rates needed for Hawk missiles and some types of 105mm tank ammunition. Although it is unlikely that sufficient levels of principal war reserve items will be acquired in the near term because of current fiscal constraints, we can improve our sustainability by targeting key industrial sectors for investment. Better products with lower unit costs will result when investments are properly allocated to basic industries.

ECONOMIES AND EFFICIENCIES

This administration's emphasis on achieving economies and efficiencies and streamlining operations throughout all federal agencies will continue and even intensify as the President's Private Sector Survey on Cost Control (the Grace Commission) releases its various reports. Therefore, it is in the Army's interest to seek ways to achieve bonafide economies and efficiencies in its operations and to document these actions in the annual budget submission to Congress.

ECONOMIES, EFFICIENCIES AND
MANAGEMENT IMPROVEMENTS (EEMI)
Savings/Cost Avoidances
(TOA $ Millions)

EEMI Initiatives	FY 81-89 Total
Acquisition	
Lower Cost Alternatives	7.3
Multiyear Procurement	1287.7
Economic Production Rates	501.7
ELIM/Reduction Marginal Programs/Systems	2571.7
Productivity Enhancements	36.7
Other Acquisitions	365.6
TOTAL	4770.7
Operations	
Logistics Improvement	1918.6
ELIM/Reduction of Marginal Programs/Systems	614.7
Administrative Overhead	517.4
Increased Productivity	2604.4
Base Support Consolidations Reductions	144.3
Other Operations Improvements	878.5
Base Realignments	78.7
Total Operations	6756.6
Total Acquisitions	4770.7
GRAND TOTAL	11,527.3

TABLE 3.21

The Department of the Army Economies, Efficiencies and Management Improvement (EEMI) Program was introduced in 1981 and is the Army's counterpart to DOD's Management Improvement Program. The EEMI Program serves as a framework to identify and integrate efforts aimed toward improving the overall efficiency and effectiveness of the Army through increased productivity and successful application of cost control techniques. Continued momentum and success of the program are directly linked to the participation of program directors and resource managers at every operating level. The Army's EEMI record for FY 81 through 89 is depicted in Table 3.21.

One of the principal initiatives under the EEMI Program is multiyear procurement. Multiyear procurement provides significant benefits for the Army due to the expanded multiyear authority provided in the FY 82 DOD Authorization Act. The expanded authority permits the use of advance procurement funds for economic order quantity (EOQ) procurement. EOQ procurement is the purchase of more than one year's requirement of an end item's components or material to obtain a better price. Prior to FY 82, advance procurement funds could be used to procure no more than one year's requirement of long lead components for material to protect an end item's delivery schedule. We initiated three EOQ multiyear contracts with FY 82 funds and seven EOQ contracts with FY 83 funds. The contracts and their estimate savings are depicted in Table 3.22.

FY 82 FUNDS	($M) Savings
BLACKHAWK	81.1
M1-Fire Control	72.2
ALQ-136	34.6
Total	187.9
FY 83 FUNDS	
M60 TTS	87.6
BFVS (Components):	
Transmission	10.1
Turret Drive	3.5
Power Control Unit	10.8
TOW Subsystem	22.1
T700 Engine	75.1
MLRS	209.1
Total	418.3
Grand Total	606.2

TABLE 3.22

Other significant initiatives include the Army's capital investment programs and the Value Engineering Program. Our capital investment programs allow us to invest funds to modernize tools, equipment, and facilities to increase productivity. The key to these programs is the ability to achieve, relatively quickly, matching savings. In other words, we operate these programs in a classical business sense. The return on investment of 14:1 is testimony to the worth of these efforts.

Our Value Engineering (VE) program has an extremely-high (30:1) return on investment. The private sector contractors help us in this program through the "VE incentive clauses" in the contracts. These clauses allow contractors to share the first year's savings.

The pursuit of economies and efficiencies are an essential element of good management. Our successes in this area demonstrate that we are prudently managing the taxpayers' dollars. The Army will continue its efforts to improve and operate in the most economical, efficient manner.

Complementing the Army's discipline efforts in the EEMI Program is the Defense Acquisition Improvement Program (DAIP).

Among the more significant outgrowths of the DAIP are efforts to strengthen the industrial base and to require specific definition of acquisition strategy earlier in the materiel acquisition process. The Army has also initiated numerous actions to stabilize the acquisition process including risk review and funding and development of a program management control system to document details of acquisition plans, costs, and requirements for management control. Most recently, the Army has pursued a program of integrating weapon systems costing with programing and execution management. Costs can then be tracked fromthe initially defined system requirement to the final acquisition program and, if required, to the Selected System Acquisition Report.

In addition to EEMI and DAIP, the Army is an active participant in DOD's Commercial Activities (CA) and Defense Regional Interservice Support (DRIS) programs. The Army's cost avoidance and budget savings in these programs have been noteworthy. For example, in FY 83 the Army achieved DRIS savings of $15.2 million which represented 54 percent of the total savings accomplished by DOD. Army DRIS achievements in FY 84 are expected to be even more impressive.

The Army's Force Report of the President's Private Sector Survey on Cost Control presented recommendations with estimated three years' savings of over $12 billion. Over 75 percent of these estimated savings were reported in the area of major materiel system acquisition.

SECTION IV: THE ARMY OF TOMORROW - Maintaining Excellence

> "It is important that the Armed Forces and our Nation maintain a forward looking attitude...There must be a readiness to understand and to accept the wide variety of tasks that are the Army's to perform -- a readiness to test, analyze and accept new weapons, doctrine, and methods -- a readiness and mental flexibility to accept those changes in organization that are required to meet the Army's varied missions -- a readiness and willingness to respond whenever and wherever the forces of freedom and our national interests are challenged."
>
> - GENERAL CREIGHTON W. ABRAMS
> Chief of Staff, U. S. Army
> 1972-1974

The overall goal of the Army is to achieve and maintain a level of readiness that will signal to foreign governments the United States' preparedness to promote and protect its interests. To make that signal credible, the Army's readiness to fight must be unmistakable, today and in the years to come.

The progress of the last three years offers high hope for the Army's future. With the understanding and support of the American people, the attainment of an Army of Excellence to ensure tomorrow's readiness is achievable. The Nation deserves no less.

A number of requests in the budget this year as part of our 5-year program will not bear fruit until much later. In this sense this year's decisions will shape the Army of the future.

Planned initiatives in the following areas highlight the Army's dedication to develop tomorrow's Army of Excellence.

RESEARCH AND DEVELOPMENT

Our R&D efforts are oriented toward taking advantage of our technological strengths. To meet the challenges of the future, we are placing greater emphasis on leading edge technologies. Examples of such technologies are distributed communication, infrared and radar target acquisition, advanced lethality munitions, artificial intelligence and biotechnology.

During the past few years, the Army has demonstrated considerable progress in developing an arsenal for the future. During FY 84, for example, we will demonstrate a countermeasure resistant, real-time, digital, command and control network; an automatic target recognizer compatible with Army developed forward-looking infrared systems; a fiber-optic guided, fire-and-forget missile; remotely controlled scouting systems; and advanced antibody generation techniques. Army systems employing leverage technologies are discussed below.

Remotely Piloted Vehicle. The Army's future reconnaissance and target acquisition capability will be enhanced by the remotely piloted vehicle (RPV). Israeli success in employing RPV's against Syrian air defense targets in the recent war in Lebanon highlights the battlefield efficacy of this technology. Because a potential enemy's air defense capability could make manned flights penetrating into his area risky, a remotely piloted vehicle with low-light television and a forward-looking infrared night vision sensor is the ideal platform for providing real-time information on front line and second echelon enemy troop dispositions. This system will have the capability to adjust artillery fire and designate targets for laser-designated precision-guided munitions. Possible future payloads include communications retransmission, jammers, and meteorological survey.

Joint Surveillance and Target Attack Radar System (JOINT STARS). The ability to see deep and shoot deep are keystones of the AirLand Battle concept. The JOINT STARS program, a joint development between the Army and Air Force, is directed toward development of an airborne radar capable of locating vehicles and rotary wing targets beyond ground line of sight and transmitting this target information through secure data link to multiple ground stations. The radar is to be mounted on the OV-1D (Mohawk) airframe for the Army and on the TR-1 or C-18 airframe for the Air Force.

Robotics and Artificial Intelligence. The Army has completed two major studies that clearly point out tremendous advantages offered by this technology. This new program highlights "demonstrators" or test beds to incorporate equipment and techniques of robotics and artificial intelligence. The highest priority demonstrator will be a tactical robotic vehicle as a means for increasing our combat effectiveness with minimal human risk and reduced logistical and training requirements. This vehicle will be equipped with sophisticated sensors for reconnaissance, target acquisition, and engagement. The vehicle will be a module for combat and combat support missions with terrain, obstacle, and target sensing capabilities.

The importance of robotic systems as combat multipliers cannot be overemphasized. The combat power generated by increased numbers of combat systems and faster reaction times will provide us a battlefield edge. Robotic vehicles can maintain constant alert and pressure on the enemy. Without human crews, vehicle size and weight can be reduced in maximizing the system's deployability anywhere in the world. Finally, the reduction in human casualties afforded by robotics protects our most valuable asset, the highly trained soldiers who would be most difficult to replace in war.

WEAPONS SYSTEMS TO MAINTAIN THE WINNING EDGE ON TOMORROW'S BATTLEFIELD

It is increasingly evident that the quality and quantity of Soviet bloc equipment cannot be offset solely by the plans enumerated elsewhere in this posture statement. In FY 83, the Army conducted an in-depth analysis of one commodity area, aviation, to determine requirements and capabilities through the end of the century. This aviation modernization plan provides a road map whereby the Army will sustain as necessary current fleet aircraft, and, within programed resources, accelerate development of a new family of light aircraft, the LHX, to replace older model Scouts, Cobras, and UH-1 utility helicopters. The same process of analyzing and formalizing future equipment plans will be applied to other commodities this year.

Ballistic Missile Defense (BMD). Funding to support the BMD program is in the process of being centralized at Department of Defense (DOD) to reflect the Strategic Defense Initiative announced by the President in 1983. Most of the funds are being removed from the services' budgets for FY 85 and beyond. However, the services will continue to execute this program under DOD direction. The Army retains responsibility for developing concepts and technologies to counter attacking missiles in the terminal and mid-course phases of their trajectories. The Army is pursuing new and innovative ideas that will lead to the conceptual development and demonstration of systems to defend our cities and other softer targets.

Anti-Tactical Missile (ATM). The joint ATM program began in FY 83. Its purpose is to counter the tactical surface-to-surface missile threat. The program is in the initial stages of concept definition and includes both near- and long-term portions. The near-term effort focuses on upgrade of existing air defense systems to blunt an initial tactical missile attack. Concurrent long-range efforts address active and passive surveillance techniques to locate tactical missiles and new or evolutionary systems to handle the total threat spectrum including destruction of launchers and missiles on the ground.

Joint Tactical Missile Program (JTACMS). This system will give the Army the capability to destroy, neutralize or delay the enemy's second echelon forces well beyond the range of current cannons and rockets. Within the framework of the AirLand Battle concept, the Army and Air Force have merged their requirements for a corps support weapon system and a conventional standoff weapon into the Joint Tactical Missile System (JTACMS) program.

Joint Tactical Fusion Program. The large volume of tactical intelligence information available on today's battlefield can give the commander an advantage over his adversary, but only if it can be reported, collated, and interpreted rapidly and accurately and if assessments can be disseminated in time for decision-makers to act. The Joint Tactical Fusion Program, initiated at congressional direction in 1980, is an Army/Air Force program to develop and field automated tactical intelligence support systems with maximum commonality in hardware and software, so that ground and air commanders may share a common perception of the enemy ground situation. In 1983 an accelerated acquisition strategy was adopted. Initial systems will be upgraded based largely on user feedback.

Electronic Warfare (EW) Systems. The Army is deploying a very capable set of ground vehicle and helicopter borne jammers to counter the enemy communications systems. These systems are all Very High Frequency (VHF) jammers with enormous potential to disrupt enemy maneuver operations. The Army also has an expendable jammer (EXJAM) program for use in specific scenario applications. The EXJAM devices may be hand-emplaced, artillery delivered or seeded by remotely piloted vehicles. The system offers many operational advantages. Minimum interference to friendly communications and electronics systems will result from low transmitting power and deployment of the devices beyond the forward line of troops. Friendly locations will not be compromised by the jammers. Expendable jammers are a very cost-effective way to achieve a jamming capability for the Army.

Sense and Destroy Armor (SADARM) Smart Munitions. The Army currently has no fire-and-forget munitions for antiarmor use by artillery weapon systems. The development of sense and destroy armor munitions will provide the first fire-and-forget, day/night, antiarmor capability which will be relatively immune to battlefield obscurants, countermeasures and weather conditions. The SADARM concept employs improved sensing submunitions which are ejected from a standard artillery projectile over an area containing armored targets. Each submunition descends on a parachute which enables a sensor to search the target area as it descends. When a target is detected, the warhead fires a kinetic energy penetrator at the top of the target. SADARM munitions for the 8-inch artillery system will enter engineering development in FY 85. SADARM munitions for the 155-millimeter howitzer are in advanced development.

INDIRECT-FIRED ANTI-ARMOR SADARM PROVIDES LOW—COST AREA COVERAGE

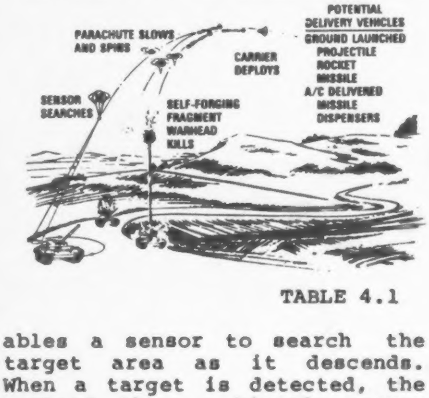


TABLE 4.1

MANAGEMENT INITIATIVES

Assistant Chief of Staff for Command and Control Information Management (ACSCCIM)/ U.S. Army Command and Control Information Management Command (USACCIMC). The Army has traditionally practiced decentralized management of the various technologies in the information field. Management has focused on information technologies, e.g., computers, word processors and laser printers, rather than on information itself.

In June 1983, a new Assistant Chief of Staff for Command and Control Information Management and a new field command, the Army Command and Control Information Management Command (USACCIMC), were approved.

ACSCCIM is designed to improve the management, quality, and flow of information throughout the Army. It is also intended to integrate fully all information functions, including command and control, communications, automation, administration, and information resource management. Additionally, it will provide improved information support for major Army commands and the Army Staff.

The USACCIMC will provide a centralized integrated approach for operating the resources and technologies dealing with all of the information sciences support for the Army worldwide. The USACCIMC will initially be formed with two major subcommands: one for automation - Army Automation Command incorporating the current Computer Systems Command at Fort Belvoir, Virginia; the other for communications, incorporating the current Army Communications Command at Fort Huachuca, Arizona.

Long Range Research, Development and Acquisition Plan. The Long Range Research, Development and Acquisition Plan is the baseline for research, development and acquisition program building and is the primary instrument available in the Army to stabilize the materiel acquisition process. Long Range Research, Development and Acquisition planning provides for input from the Army requirements community and from the Army development community. Annually, a Total Army review is made to update the plan to reflect management goals, the current evaluation of the threat, the future environment, and the current concept of operations. Affordability considerations are made based on The Army Plan, Defense Guidance, and the established prioritization process.

Quality Assurance. A number of actions have been initiated to strengthen the Army's quality assurance program while giving firm notice to industry to improve its quality controls. The basic approach is to get smarter on contracting and tougher on contract enforcement, particularly during early development and initial production. Among the Army initiatives is a recurring system of reviews by contractor assessment teams of technical and management experts. These teams have visited production facilities to assess contractor performance. The Army has also established a senior executive level orientation program and will require additional formal training for all quality assurance personnel.

The Army has a comprehensive warranty program which also serves to improve the quality and performance of the equipment purchased. The program is a flexible one which provides for the individual assessment of each new weapon system to determine the best type of warranty to pursue, the costs, and the impact on readiness and units in the field. Warranties, if appropriate, are tailored to provide maximum payoff at least cost. Last year's congressional directive on warranties is currently being reviewed by the Army and DOD to develop the guidance necessary to assure the continuation of a flexible and effective program.

Computer Standardization. The proliferation of computers in Battlefield Automated Systems (BAS) has resulted in unacceptable high operation and support costs. Studies found that for 92 Army systems, there are 57 different computers from 29 different manufacturers. To combat this problem, the Army is developing the Military Computer Family to reduce computer proliferation in all Battlefield Automated Systems and in their automated support systems. The standardization benefits for BAS will include a reduction in logistical support costs, an increase in availability, an enhancement in survivability, and an increase in the commander's flexibility. Since the Military Computer Family will be designed for upward compatibility, current technology can be meshed with evolving technology to ensure our computer requirements are fulfilled in the 1990's and beyond.

STRUCTURING THE FORCE

The Army must have flexible forces, readily tailored to meet one or more simultaneous events and strategically deployable for global responses in hostile environments anywhere along the spectrum of conflict.

The force structure changes programed for FY 85 fully support the Army's priorities of readiness, modernization, sustainability, and deployability. Programed improvements for FY 85 include unit reorganization and modernization; conversion of heavy divisions in Europe to refined Division 86 unit designs, conversion of a CONUS infantry division to a new light division design and activation of a new light infantry division; increase unit readiness and reduce hollowness (increase the authorized level of manning in tactical support units); enhance the capability of Special Operations Forces (increase manning); improve command and control (activate one area signal company); and improve combat service support (activate two ammunition, one fuel truck, one fuel supply, one LACV-30, and one heavy equipment maintenance company).

Reserve Components will continue their conversion to Division 86 unit designs, resulting in an increase of ten armor companies, six mechanized infantry companies, and one armored cavalry squadron. Also, 600 active full-time manning spaces are scheduled to be replaced by Active Guard/Reserve (AGR) spaces in the Army National Guard by the end of FY 85. Force trade-offs have included transfer of missions and equipment to the Reserve Components, conversion of military spaces to civilian, and inactivation of selected battalion-size units. These trade-offs have been necessary to minimize the size of the FY 85 end strength. Specific force structure changes are discussed in detail below.

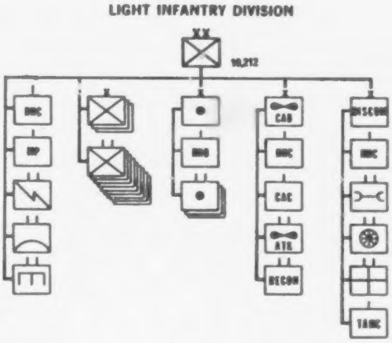


TABLE 4.2

Light Infantry Divisions. On 21 October 1983, the Army approved the concept for a new 10,000 man light infantry division. The basic design is shown in Table 4.2.

The division is designed with the following parameters and roles: an elite hard hitting, light infantry force; high ratio of combat power to overall strength, with a high leader-to-led ratio; designed as a highly deployable strategic reserve, capable of deterring or fighting in any region; and strategically mobile (deployable in 400 - 500 C141 sorties or about one-third of what other light divisions now require). Such a force, rapidly deployed in the first days of a crisis, could defuse the crisis thus precluding the deployment of a much larger force later.

The Army intends to start conversion of one of its infantry divisions to this design in FY 85, followed by formation or conversion of more of these elite infantry divisions as soon thereafter as appropriate. There are no plans to convert Army National Guard divisions to the new light division configuration. However, activation of a division in the Army National Guard under the new light division configuration is planned in the near future.

Division 86 - Current Status. The Division 86 design changes and equipment fieldings have only just begun but are on schedule in their transition to Army 90. Both capitalize on force modernization multipliers that are comparatively low in cost yet high in the combat leverage required for an Army of Excellence.

CONUS and USAREUR forces began transitioning to Division 86 in FY 83 and are scheduled to complete their transition by 4th quarter, FY 86. Reserve Component units began in FY 83 and are scheduled to be completed by the end of FY 89. Reserve Component roundout units transition simultaneously with their Active Component units. Highlights of divisional design changes are:

- Tank and infantry companies per battalion increase from 3 to 4.

- Armor divisions contain 6 tank battalions and 4 mechanized infantry battalions.

- Mechanized infantry divisions contain 5 tank battalions and 5 mechanized infantry battalions.

- Artillery pieces increase from 66 to 72. An MLRS battery is added.

- All aviation assets are contained in the cavalry brigade (air attack).

- Air defense battalion gun systems increase from 24 Vulcan to 36 SGT York.

- NBC defense is enhanced and smoke-generating capability added.

- Size of full TOE divisions: Armor - 16,300; Infantry (Mechanized) - 16,600.

Placement of modernized equipment for Active and Reserve Component units began in FY 83 in both CONUS and Europe. Major items of equipment will continue to be fielded thru FY 92 with the preponderance completed between FY's 84-89. Highlights of the equipment fielding are:

- Bradley Fighting Vehicle to units started in FY 83.

- M1 tank to units starting in FY 81; M1E1 starting in FY 86.

- Multiple Launch Rocket System in USAREUR in FY 83.

- SGT York Air Defense Gun to units starting in FY 85.

- AH-1S Cobra fielded in FY 83 with eventual placement of AH-64 Apache to corps units in FY 85.

- UH-60 Black Hawk replacement began in FY 79.

The improvement of operationally effective units through modernization is the Division 86 commitment to tomorrow's Army of Excellence.

Special Operations Forces. On 2 June 1982, the Army started an extensive program to improve the readiness and capabilities of its Special Operations Forces (SOF). These Special Operations Forces include Special Forces, Ranger, PSYOP and Civil Affairs units. The goal of the program is to improve all SOF units through complementary improvements in organization, force structure, and doctrine. The current force still does not meet total SOF requirements. The addition of a Special Forces group to the force structure in FY 84 will provide the Total Army with four Active and four Reserve Component Special Forces groups. The new Special Forces group will help reduce the multiple taskings for SOF supporting contingency plans. Additional SOF aviation assets, improved authorized levels of organization, and increased staffing for Headquarters, 1st Special Operations Command (SOCOM) are some of the major enhancements sought in the FY 85 budget.

Changes in NATO Structure. The number of Army soldiers stationed in Europe was reduced by about 9,000 from FY 83 to comply with a congressionally imposed troop ceiling. This personnel reduction resulted in undermanning and degraded readiness in certain combat units. To preclude continued undermanning, the force structure has been reduced to the level of the FY 84 ceiling. Over these two years, high priority modernization and other force improvement programs have been initiated only by trading off existing force structure - to include eliminating a combat brigade.

Maintaining FY 84 Army strength in Europe in FY 85 is key to the continued implementation of many modernization and readiness improvements including: transition of heavy division units to new designs (Division 86), fielding of major weapon systems (Multiple Launch Rocket System, modernized nuclear weapons, Bradley Fighting Vehicle, SGT York Air Defense System), and improved levels of manning in critical units. These improvements are essential to the maintenance of a credible deterrent, backed by a properly organized force equipped with weapons systems representing current technology, and capable of sustained operations.

Reserve Component Management Revisions. The Army has begun implementation of a major reorganization of the FORSCOM Reserve Component management structure. This reorganization is designed to eliminate a layer of supervision, and provide increased responsibility to the Army National Guard and Army Reserve as their role in national defense continues to grow. This program will eliminate nine Army Readiness and Mobilization Regions and establish two additional Continental Armies. Headquarters, Army Readiness and Mobilization Region IV was discontinued and Headquarters, Second U.S. Army organized on 1 October 1983. The remaining structural changes will be completed by 30 September 1985.

The U.S. Army Reserve units activated under FY 85 USAR

Troop Action Guidance will enhance the Army's combat service support capability in critical areas of conventional ammunition supply, water production and storage, chemical decontamination, communications and medical support. Additionally, this program includes 10 unit activations which will accept the missions and equipment sets of inactivating Active Component units. This action increases the USAR's number of roundout units and reflects its expanded role in the Total Army. Programed reorganization actions will result in the modernization of USAR unit structures to align them more appropriately with revised Army doctrine.

Additionally, the Army Reserve Personnel Center will be established in early 1984. This agency will enhance the executive role of the Chief, Army Reserve by giving him responsibility for the management of the Individual Ready Reserve, Individual Mobilization Augmentees, and Army Reserve Active Guard/Reserve personnel.

Activation of National Guard Heavy Division. The U.S. Army will form a new mechanized infantry division in the Army National Guard beginning in FY 84. The new division, the 35th Infantry Division (Mechanized), will be the ninth Army National Guard combat division, increasing the number of Total Army combat divisions to 26 in FY 85.

The 35th Infantry Division (Mechanized) will be organized with some subordinate organizations not programed to activate for several years. Divisional organization will follow Division 86 force structure design.

Three Army National Guard separate brigades will form the nucleus of the division. These brigades are the 67th Mechanized (Nebraska), the 69th Mechanized (Kansas), and the 149th Armored (Kentucky). The remainder of the division will be formed either by new unit activations or by conversions of existing units. In addition to Kansas, Kentucky and Nebraska, the States of Missouri and Colorado will also provide units for the new division.

Logistics Force Structure. In view of current logistics force shortfalls, recent approval of the light division concept and the thrust to increase combat force structure within a fixed total end strength, the Army must modernize and reshape its logistics force structure with the aims of doing more with less while increasing the combat to support ratio . The reshaping of logistics is being accomplished in three ways. First, the Army is looking at ways to do the current job better. Modern technologies and innovative management techniques are being explored to enhance the productivity of logistics units. The Tactical Organization Paperless Service Support System (TACOPS), Battelfield Robotics and LOGMARS are examples of programs being developed and explored to help do the logistics job better.

Reducing the logistics requirement itself is a second way to reshape the logistics force structure. By modernizing support systems and becoming more efficient, the logistics force requirement can be reduced. Repair parts companies, command and control headquarters, and water and petroleum organizations are some of the units being examined for streamlining, space reduction or elimination.

The third way to reshape is to exploit opportunities offered by external support. Here the Army is looking at such things as expanded host nation support, increased support from other services, commercial activities and the Logistics Civil Augmentation Program (LOGCAP). A wealth of external support sources exist outside the Army.

Significant changes are being made in the logistics force now and in the next few years to keep pace with other evolving changes in the Army. The overriding goal will always be to ensure the Army has the vitally important logistics capability to support itself in all contingencies.

Host Nation Support. The Army is short Active force support units currently needed at the onset of hostilities to support a global scenario. Forward deployed and reinforcing forces rely heavily on host nation support for force sustainment. Negotiations are underway with many nations to obtain host nation support or to expand existing agreements.

However, host nation support will not be sufficient to offset all of the support shortfalls for a global war. Moreover, host nation support from one region cannot be moved to another region. Therefore, the Army still requires a nucleus of tactical support units and a logistics network extending forward from the U.S. A minimum unilateral U.S. support capability must be maintained in addition to host nation support.

USCENTCOM. The Army continues to commit significant resources to improve Central Command's capability to accomplish its mission in Southwest Asia. Since our peacetime presence is limited, we have undertaken to improve our capability to project forces rapidly into this vital region while ensuring their sustainment in any subsequent combat. The Army's budget request includes additional prepositioning of equipment aboard Navy ships, providing an enhanced command and control capability and improving our capability to load and offload sealift as it arrives in theater. Furthermore, the Army's request seeks to increase both our staging capability and the number of combat support and combat service support units available to USCENTCOM. In sum, our efforts are aimed at providing USCENTCOM with the Army forces and equipment necessary to carry out U.S. interests in that part of the globe. Failure to support the Army's program fully may degrade U. S. capability to protect its interests in this vital area.

Chemical Warfare Force Structure. The Army's chemical force structure is based on the doctrine of avoiding contamination to the maximum extent possible, protecting our forces, and decontaminating when necessary. The FY 85 budget provides for activation of two Active and one Reserve chemical companies, two Active battalion headquarters detachments, and one Reserve group headquarters detachment for command and control.

SECTION V: SUMMARY - Budget Assessment

We are proud of the Army's significant accomplishments cited in the preceding sections of this statement. We are optimistic that our FY 85 budget request will produce further essential improvements in the Army's readiness posture. To that end, the FY 85 budget request supports improvements and initiatives which will ready the Army to react fully and flexibly to divergent worldwide threats to our national interests. This is not to say, however, that the budget request is a panacea. On the contrary, specific areas where the FY 85 budget falls short are enumerated in Annex A. An examination of the budget request in terms of specific readiness objectives is provided below.

Since the Army depends on people to accomplish its mission, our first budget objective is manning the Total Army with sufficient numbers of competent people to accomplish the Army's mission. The resources requested to support the Army's manpower requirements are designed to carry on the recruiting and retention successes experienced in FY 83. In view of the sophisticated equipment scheduled to enter the force during the next five years, the accession of quality soldiers is essential. Dollar resources are provided to support an Active military end strength of 780,800 as well as continued growth of the Reserve Components.

Our second budget objective is training. The resources requested to support the training mission will help build and sustain a flexible and ready force prepared to go to war and win. The FY 85 budget primarily builds on existing training programs and continues several major initiatives aimed at improving the training effectiveness of Today's Army. Improvements are made to both officer and noncommissioned officer education systems, and sufficient resources are provided to sustain increases to Active and Reserve Component officer aviation training rates. Dollar and manpower resources are provided to support the integration of a multitude of new equipment and weapon systems into the Army's individual training programs. In addition, funding is provided for continued development of the National Training Center and to support training for 28 battalion task force rotations.

To improve the Army National Guard and Army Reserve units supporting USCENTCOM, the FY 85 budget includes funds for the assignment of additional full-time soldiers, additional drill periods, and other improvements for combat support/service support units.

While our third objective is to modernize the Total Army, we must ensure that modernization of the Active Force has positive effects on the Reserve

Components. The FY 85 Total Army will retain a force of 26 combat divisions. In FY 85, 16 battalions will be modernized as a result of major weapon system changes. The modernized battalions result from the introduction of: UH-60 Black Hawk helicopters to three combat aviation battalions; Bradley Fighting Vehicles to three mechanized infantry battalions; the Multiple Launch Rocket System (MLRS) to two 8-inch field artillery battalions (which will become composite 8-inch MLRS battalions); and the M1 Abrams tank to four armored battalions and four armored cavalry squadrons.

The FY 85 budget attempts to balance weapons and equipment modernization with the need to maintain force readiness by eliminating shortages in existing equipment. The FY 85 budget devotes $22.3 billion to the research, development, testing and evaluation, and acquisition of critical new force multipliers.

The nuclear, biological and chemical defense readiness posture will be improved by funding individual chemical defense equipment, biological and chemical detecting devices, and decontamination equipment. Funds are also included for procurement of critically short combat service support equipment such as fuel and ammmunition vehicles, material-handling equipment, mobile automatic data processing equipment and generators. Despite the magnitude of the budget, major shortages still exist for supporting systems and equipment to include: battlefield recovery, ammunition handling and distribution, petroleum distribution and war reserve stocks.

Our fourth budget objective addresses the need to equip, mobilize and deploy a force of sufficient size in a timely manner to influence the early stages of conflict. Individual clothing and equipment required for mobilization training base expansion continues to be funded in FY 85, moving the Army gradually toward the capability to outfit all of its trainees during the first 90 days of mobilization.

The FY 85 budget also includes funding for layaway and maintenance of reserve standby industrial facilities which are critical to wartime production.

While some progress has been made in improving the posture of war reserve stocks, much more needs to be done. Because the industrial base is incapable of significant contribution in the early phases of an emergency, it cannot be considered a substitute for our war reserves. Therefore, the FY 85 budget provides for additional days of supply of major and secondary items and ammunition.

Finally, we are continuing the progress made towards improving the quality of life of soldiers and their families. Quality of life issues have a direct impact on readiness and on the commitment of soldiers to an Army career. Quality of life categories include housing, both barracks and family quarters; facilities operations and maintenance; education opportunities; family and religious needs; community/morale, welfare, and recreation services; and health care facilities. The FY 1985 budget includes funding for barracks construction and modernization, and facilities maintenance projects, especially in Europe. The FY 85 budget request for quality of life issues includes $1.5 billion for repair and maintenance of facilities. Funding of the FY 85 budget request will enable us to maintain previous improvements made in the living and working conditions of our soldiers and their families.

ANNEX A: BUDGET OVERVIEW

Guaranteeing the security of our Nation and ensuring our continued freedom to prosper requires a strong national defense. We need strong military forces adequately equipped and trained to support our policy objectives and defend our worldwide interests. In the face of declining defense budgets during the 1970's, our military capabilities were seriously eroded. As a result, we must spend more today to revitalize them. While we are not weak relative to the potential demands, our capabilities fall severely short.

The Army faces particularly serious problems in bringing its combat strength up to desired levels. Force levels are too low to meet the multiple demands of our national strategy and ground combat unit equipment must continue to be modernized. Correcting these problems will require that the real growth we achieved in the Army's budgets for FYs 81-84 be sustained in FY 85 and the years ahead.

With the needed budget increases coming at a time when the growth in spending for other national programs must be reduced (Table 6.1), it is especially important that we understand why continued defense spending increases are necessary. The downturn in defense spending over the last decade and a half, coupled with unfaltering qualitative and quantitative Soviet defense improvements have seriously eroded our capabilities and rendered our forces inadequate to meet the potential demands for their use. However, the additional resources provided in FY 81 - 84 budgets have begun to remedy our most serious deficiencies, and the budget we have proposed for FY 85 will ensure that our rebuilding effort stays on track. Our soldiers, who must risk their lives for our country, are just beginning to get the advanced equipment they deserve. In turn, we are giving them the training and field exercises essential to increase their proficiency.

FEDERAL BUDGET OUTLAYS

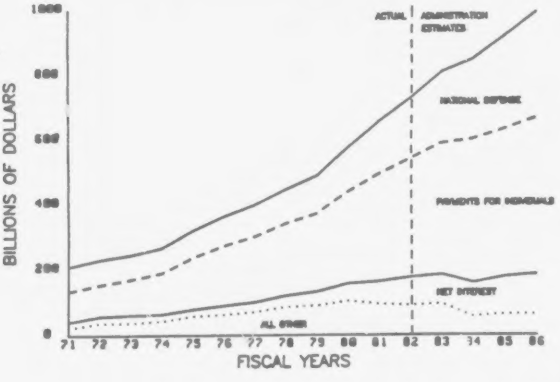
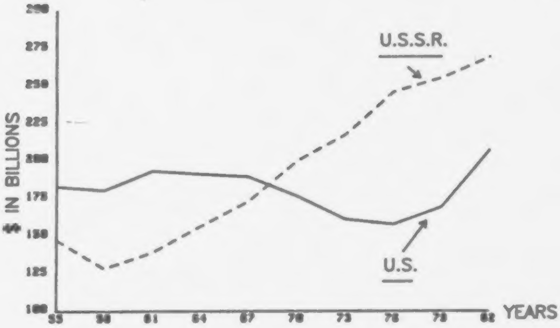


TABLE 6.1

THE SOVIET UNION HAS CREATED AN IMPOSING MILITARY FORCE

Defense Spending Trends. While we were cutting back our military budgets, the Soviets were increasing their defense effort. Soviet defense expenditures are difficult to measure. Our best evidence suggests, however, that the sustained Soviet build-up we have witnessed over the last decade had its roots in the cold war period of the late 1950's. Shortly thereafter, U.S. spending on its worldwide-deployed forces began a decade-long decline, interrupted only by the temporary upturn during the Vietnam years. The estimated dollar cost of Soviet military activities in 1982 was about 30 percent greater than the comparable defined U.S. outlays for that year. Thus, the Soviets currently allocate an estimated 15 percent of their GNP to defense. Table 6.2 displays this trend very clearly.

COMPARISON OF DEFENSE OUTLAYS
(CONSTANT FY85 DOLLARS)



NOTE: * Soviet Outlays Estimated in Equivalent Dollars
** U.S. Without South-East Asia

TABLE 6.2

The large spending gap that resulted has created a significant imbalance in combat capability. For example, between 1978 and 1982 the Soviets and their Warsaw Pact allies produced more than three times as many tanks, and fourteen times as many artillery and rocket launchers as the United States. Table 6.3 shows the magnitude of average annual Soviet production as compared to our FY 85 request.

A COMPARISON OF AVG ANNUAL SOVIET PRODUCTION & FY 1985 U.S. REQUESTS

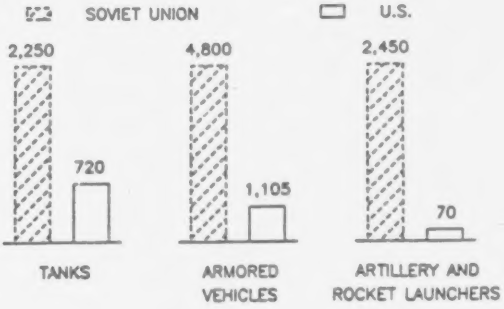


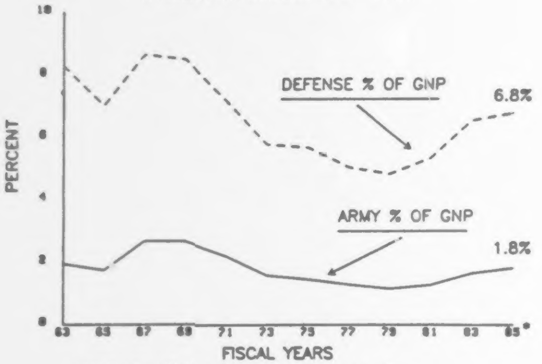
TABLE 6.3

THE BUDGET INCREASES OF FY 1985

Defense. The overall level of the Defense Budget must be viewed both in terms of the threat facing our nation and in terms of the resulting burden on the economy. Although the budget request for FY 85 is substantial in absolute terms, it places a modest burden on the economy when viewed historically. During the 1950's and 1960's, Defense spending averaged about 8% of GNP (Table 6.4). By 1980, the Defense budget was only 5% of GNP. The FY 85 request is 6.8% of GNP.

Army. In FY 81, the total Army budget accounted for about 1.3 percent of the GNP. The Army's budget request for FY 85 reflects a 1.8 percent share of GNP (1.6 percent excluding Military Retired Pay Accrual). The Army's share of the GNP is no higher today than it has been in previous post war periods. While the real growth increases provided in FY 81 through 84 have accelerated that trend, they cannot offset the erosion of the previous decade. We will need to sustain that momentum in FY 85 and the years ahead if we are to correct our remaining deficiencies and regain the combat capability needed to match our national strategy.

DEFENSE/ARMY OUTLAYS AS A PERCENTAGE OF GNP



* Includes Military Retired Pay Accrual

TABLE 6.4

BUDGET HIGHLIGHTS

This budget capitalizes on force multipliers that are comparatively low in cost yet high in combat leverage. We seek to augment muscle with agility by:

- Activating a 17th Army Divsion to new light division design without increasing the Active Army end strength.

- Continuing formation of a 9th Army National Guard Division.

- Continuing transfer of Active Component missions to Reserve Component (roundout battalion for 1 heavy division, increased full-time manning in reserve component).

- Continuing conversion of an infantry divsion to new light division design.

- Continuing the experimental high-tech motorized division.

- Continuing conversion of 10 heavy divisions to Division 86 design.

- Improving readiness through increased manning levels and quality of the soldier:
  - -- Raise Army National Guard end strength from 433K to 447K.
  - -- Raise Army Reserve end strength from 278K to 298K.
  - -- Hold Active Army end strength approximately to FY 84

level, while continuing the increase in accessing high quality non-prior service personnel in the Active Army, Army National Guard, and Army Reserve.

- -- Increase enlistment and reenlistment bonuses as unemployment falls and youth population declines.
- -- Provide additional primary and basic technical courses for non-commissioned officers.
- -- Provide resources for expanded officer basic courses and the combined arms services staff school.

- Maximizing the use of state-of-the art, high technology systems.

- Increasing readiness through modernization:
  - -- M1 Abrams Tank
  - -- M2/M3 Bradley Fighting Vehicles
  - -- AH-64 Apache Helicopter
  - -- SGT York (DIVAD) Gun
- Improving the Army National Guard and Army Reserve equipment status.

- Using more Host Nation Support.

Today, the Army is much more capable of meeting potential requirements than it was in 1980. The budget increases provided in FY 81 through 84 accelerated programs to eliminate decade-old deficiencies. Much remains to be done, however. If the increases requested for FY 85 are provided and if the momentum of improvement can be sustained, the capabilities of the Army can be aligned more closely with the demands of the national strategy. We also can have an Army that is housed and equipped commensurate with the high quality of the personnel now choosing an Army career.

ARMY'S BUDGET MIX

The accounting change to include military retired pay accrual in the Army's military personnel appropriations has significantly changed the budget mix percentages for FY 85. In Table 6.5 below the Cost of Maintaining the Army chart shows the percentage of the Army budget including military retired pay followed by a comparison chart showing what those percentages would have been if military retired pay accrual was not included in the Army appropriations for FY 85.

The Army's FY 85 budget request continues the initiative started three years ago to modernize our forces. Military personnel accounts have decreased from 30 percent in FY 84 to 28 percent in FY 85. The 2 percent reduction in personnel is largely due to holding the active army end strength at the FY 84 level. Operation and maintenance accounts have decreased from 33 percent in FY 84 to 32 percent in FY 85. Investment accounts contain the majority of the increase. The FY 85 budget request increases this percent from 37 percent in FY 84 to 40 percent in FY 85. The 3 percent increase in investment is primarily directed towards improving readiness while modernizing our forces.

COST OF MAINTAINING THE ARMY FY 1985

(TOA IN BILLIONS)

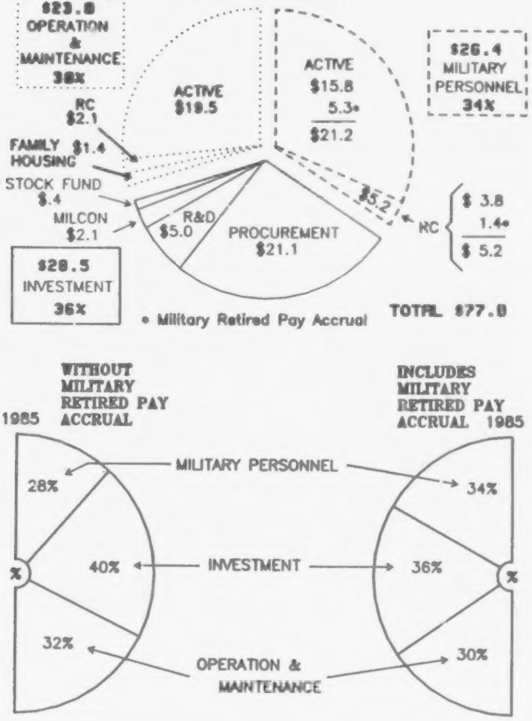


TABLE 6.5

APPROPRIATION OVERVIEW

The FY 85 Army budget is $77.9 billion in total obligational authority (TOA), which requires budget authority (BA) of $77.6 billion and outlays of $69.8 billion. The following table shows the FY 85 request in current and constant dollars in comparison with FY 84 and FY 83.

DEPARTMENT OF THE ARMY
BUDGET COMPARISON
($ in Billions)

CURRENT DOLLARS

	FY1983	FY1984	FY1985
TOA	57.6	62.6	77.9
BA	57.5	62.3	77.6
Outlays	51.5	55.8	69.8

CONSTANT FY 1985 PRICE

	FY1983	FY1984	83-84 REAL GROWTH	FY1985	84-85 * REAL GROWTH
TOA	62.8	65.5	4.4%	77.9	10.2%
BA	62.7	65.3	4.2%	77.6	10.2%
Outlays	56.0	58.5	4.5%	69.8	9.7%

* Real Growth excludes Retired Pay Accrual

TABLE 6.6

FY 83 totals represent actual obligations and expenditures. FY 84 data represents the current year budget as appropriated by Congress, $61.9 billion, plus a pay and program supplemental request of $.7 billion, and reprogramming actions that were submitted to Congress. The FY 85 request includes $74.4 billion before the Defense Subcommittee and $3.5 billion before the Military Construction Subcommittee.

Important Accounting Change in the FY 85 Budget - The Retired Pay, Defense appropriation from which retired members and survivors are currently paid will be discontinued beginning in FY 85. The FY 84 Defense Authorization Act (P.L.98-94) provides for the establishment of accrual accounting for the military retirement system effective October 1, 1984 (FY 85). The law requires that a new trust fund will be established from which payments to retired military members and their survivors will be paid. Trust fund assets will be generated from three sources; accrual costs from military pay accounts, unfunded liability amounts from the General Fund, and interest on the Trust Fund assets. Hence, military retired pay accrual becomes a part of the Army military personnel appropriation accounts (Active, National Guard, and Army Reserve) effective FY 85. This action increases the Army's budget by $6.7 billion dollars in FY 85, but does not add to military capability.

ARMY BUDGET
($ in Millions)

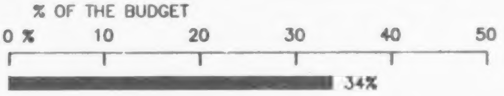
	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Military Personnel:	17,515	18,753	26,432
Retired Pay Accrual	-	-	(6,714)
Military Personnel, Army	14,620	15,425	21,173
Retired Pay Accrual	-	-	(5,325)
National Guard Personnel, Army	1,673	1,933	3,075
Retired Pay Accrual	-	-	(828)
Reserve Personnel, Army	1,222	1,395	2,184
Retired Pay Accrual	-	-	(560)
Operation and Maintenance:	19,081	20,453	23,013
Operation & Maintenance, Army	16,149	17,335	19,487
Operation & Maintenance, Army National Guard	1,187	1,187	1,405
Operation & Maintenance, Army Reserve	705	692	715
National Board for the Promotion of Rifle Practice	1	1	1
Army Family Housing	1,039	1,238	1,405
Investment:	21,052	23,305	28,473
Procurement	15,909	17,350	21,060
Aircraft Procurement, Army	(2,498)	(3,273)	(4,008)
Missiles Procurement, Army	(2,683)	(2,824)	(3,442)
Weapons & Tracked Combat Vehicles Procurement, Army	(4,597)	(4,663)	(5,093)
Ammunition Procurement, Army	(2,124)	(1,940)	(2,494)
Other Procurement, Army	(4,007)	(4,650)	(6,022)
Research, Development, Test and Evaluation	3,895	4,259	4,987
Military Construction	1,026	1,306	2,059
Military Construction, Army	(930)	(1,184)	(1,900)
Military Construction, Army National Guard	(55)	(68)	(89)
Military Construction, Army Reserve	(42)	(55)	(70)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Stock Fund	221	389	366
Stock Fund War Reserves	(221)	(242)	(210)
Peacetime Stock Fund Inventories	-	(147)	(156)
TOTAL PROGRAM *	57,648	62,563 **	77,919

* Totals include Wildlife Conservation, Army
** Includes Summer Olympics, $50M
NOTE: Columns may not add due to rounding.

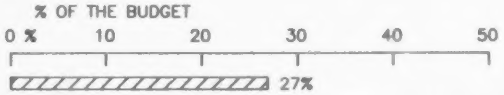
TABLE 6.7

MILITARY PERSONNEL -- $26.4 BILLION



Approximately 34% of the Army budget is allocated to military personnel. The military personnel accounts provide for pay, subsistence, other allowances, Retired Pay Accrual, and individual changes in duty stations for soldiers in the Active and Reserve Components.

Military Personnel, Army:



The FY 85 Military Personnel, Army (MPA) appropriation request is $21,173 million. Table 6.8 shows the Active Army military strengths and areas funded by the appropriation.

Active Component Manpower Program
(End Strength)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Officers	105,674	108,412	108,894
Enlisted	669,364	667,169	667,487
Cadets	4,605	4,419	4,419
Total	779,643	780,000	780,800

Military Personnel, Army
($ in Millions)

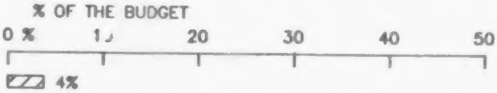
	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Pay and Allowances			
Officers	3,474	3,714	5,384
Enlisted	9,298	9,673	13,730
Cadets	32	33	32
Subsistence - Enlisted	897	981	999
Permanent Change of Station Travel	915	948	927
Other Military Personnel Costs	4	77	101
Total Program	14,620	15,425	21,173
Retired Pay Accrual	-	-	-5,325
Total Excluding Retired Pay Accrual	14,620	15,425	15,848

NOTE: Columns may not add due to rounding.

TABLE 6.8

The FY 85 request of $21.2 billion provides for slight increases in officer and enlisted strengths to support the approved Army force structure. The primary reason for the increased TOA of $5.7 billion over FY 84 is the inclusion of the Retired Pay Accrual Program ($5,325B). The budget includes increases for PCS initiatives to reduce out-of-pocket cost of service members when directed to move to a new station, and variable housing allowance funding to bring service members back to the original 15 percent rate of housing cost absorption. Discounting the increase for military retired pay accrual the budget growth in FY 85 current dollars is $.4 billion.

National Guard Personnel, Army:



The FY 85 National Guard Personnel, Army (NGPA) budget request of $3,075 million provides pay and related expenses for Army National Guard personnel. Table 6.9 shows Army National Guard personnel strengths and the NGPA budget categories.

US Army National Guard
(End Strength)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Pay Group A	377,486	386,315	389,773
Pay Group F	15,515	19,617	20,491
Pay Group P	10,420	10,436	10,436
Full-Time Active Duty	13,757	16,632	26,583
Total	417,178	433,000	447,283

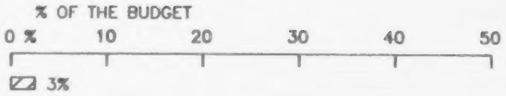
National Guard Personnel, Army
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Pay Group A/P	996	1,070	1,599
Pay Group F	189	217	326
School Training	69	94	138
Special Training	58	80	122
Administration/Support	361	472	890
Total Program	1,673	1,933	3,075
Retired Pay Accrual	-	-	828
Total Excluding Retired Pay Accrual	1,673	1,933	2,247

TABLE 6.9

The FY 85 request supports a 447,283 personnel end strength or a 3.3% increase over FY 84. Funding includes a recruiting objective of 63,000 Non-Prior Service (NPS) personnel for initial active duty training and 47,000 Prior Service personnel for a total of 110,000 in FY 85. The full time Active Guard support force increases to 26,583 (9,951 over FY 84). Funding for National Guard personnel supports increases in School and Special Training ($31 million), full-time support ($194 million), extra week annual training, additional training assemblies and an increase in strength of Pay Group A/P ($50 million). The Incentive Program, which provides enlistment and reenlistment bonus and educational assistance, amounts to $59 million. Pay Group F, which provides for initial active duty training, is increased by $33 million to provide costs associated with training the NPS accessions. FY 85 request includes $828 million for ARNG retired pay accrual.

Reserve Personnel, Army:



The FY 85 Reserve Personnel, Army (RPA) budget request is $2,184 million. Table 6.10 shows Army Reserve personnel strengths and Army Reserve budget categories.

Reserve Personnel, Army
(End Strength)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Paid Drill Strength	251,031	258,377	270,058
Active Duty Strength	7,033	9,022	15,027
Individual Mobilization Augmentees (IMA)	8,124	10,718	13,362
Total	266,188	278,117	298,447

Reserve Personnel, Army
($ in Millions)

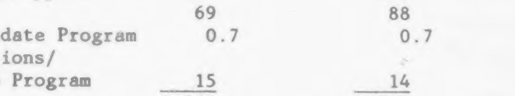
	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Pay Group A/P	628	671	993
Pay Group F	127	164	253
Pay Group D	14	19	29
School Training	44	64	98
Special Training	56	45	67
Mobilization Training (IRR)	54	54	89
Administration/Support	215	277	527
ROTC	69	88	115
Chaplain Candidate Program	0.7	0.7	0.9
Health Professions/ Scholarship Program	15	14	14
Total Program	1,222	1,395	2,184
Retired Pay Accrual	-	-	560
Total Excluding Retired Pay Accrual	1,222	1,395	1,624

NOTE: Columns may not add due to rounding.

TABLE 6.10

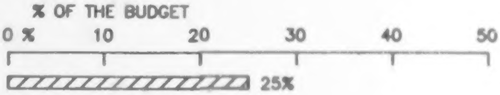
The FY 85 budget request will fully fund annual and inactive duty training at required (statutory) levels. In addition, it will fully fund the recruiting program and provide for an increase of 1,722 ROTC graduates. Funding will support an increase in AR Selected Reserve Average Strength of 16,600. Included in this increase are 4,211 AGR individuals of which 3,678 are Full-Time Manning personnel in direct support of unit readiness. In addition, this request provides for increases in School/Special/Mobilization Training which will decrease MOS mismatch and increase mobilization capability of IRR and Troop Program Unit members.

OPERATION AND MAINTENANCE -- $23.0 BILLION



Approximately 30 percent of the Army budget is allocated to Operation and Maintenance which provides for all operational activities to include: maintaining the near-term readiness of our units; supporting unit and individual training requirements; supporting recruiting, examining, and processing of the volunteer force; operating the logistical maintenance base; and operating the Army's supply system. Operation and maintenance funds also support the maintenance of facilities, pay the salaries of the civilian workforce, and contribute toward providing an adequate living and working environment.

Operation and Maintenance, Army:



The distribution of Operation and Maintenance, Army (OMA) by program is shown in Table 6.11.

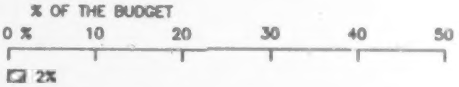
Budget Program
($ in Millions)

	FY83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
2 - General Purpose Forces	2,614	3,025	3,387
3 - Intelligence/Communications	826	938	1,113
7 - Central Supply	2,736	2,818	2,964
7 - Maintenance	1,770	1,857	2,272
7 - Environmental Restoration	-	-	98
8 - Training	841	918	1,080
8 - Medical	1,084	1,131	1,189
8 - Other	486	538	576
9 - Administration	799	857	931
10- Other Nations Support	88	99	206
11- Base Operations (-)	2,413	2,618	2,834
12- RPMA	2,492	2,536	2,837
Total Program	16,149	17,335	19,487

TABLE 6.11

The FY 85 request of $19.5 billion provides for the enhancement of near-term readiness of the existing force and maintains the capability to expand the force through mobilization. The supported force will consist of 17 Active divisions, 6 separate brigades, and 3 armored cavalry regiments. Training resources will provide for 28 battalion rotations through the National Training Center. The U.S. Army Communications Command will support U.S. and allied forces in 15 countries. This budget will finance the activities of 14 supply depots, 35 supply depot activities, 5 reserve storage activities, 6 accountable supply distribution centers, 29 command procurement offices, and 42 program management offices. Primary health care will be delivered through the operation of 50 hospitals and numerous separate dispensaries and health clinics. The budget supports active Army recruiting, advertising and examining activities; operation of reception stations; and other general personnel activities. Other Nation Support provides resources to fullfill Army responsibilities for U.S. financial contributions to international activities.

Operation and Maintenance, Army National Guard:



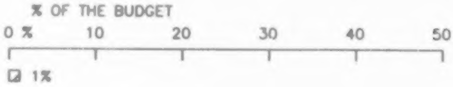
The funding categories of the FY 85 Operation and Maintenance, Army National Guard (OMARNG) appropriation are shown in Table 6.12. Real growth in FY 85 is approximately 14 percent and occurs as a result of programed force structure modernization, increased support for modernized systems (87) added to the ARNG equipment inventory since FY 83, and readiness improvements. In addition, this appropriation supports a technician and civilian end strength of 24,563 at a cost of $675.9 million which accounts for 48 percent of the total appropriation value.

Operation and Maintenance, ARNG
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Training Operations	152	154	160
Logistical Support	797	775	911
Base Operations	94	93	122
Depot Maintenance	56	54	82
Headquarters and Command Support	58	74	88
Recruiting	22	27	29
Medical Support	8	10	13
Total Program	1,187	1,187	1,405

TABLE 6.12

Operation and Maintenance, Army Reserve:



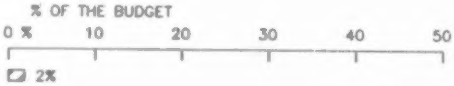
The FY 85 Operation and Maintenance, Army Reserve (OMAR) appropriation request (Table 6.13) reduces the program level by 1 percent in real terms. OMAR will provide increased funding for base operations, readiness, modernization, and force structure initiatives. The budget request will not fully fund all authorized stock fund equipment for all troop program units. The $1 million increase in BMAR does not fully fund annual recurring requirements but will slow growth in the BMAR backlog.

Operation and Maintenance, Army Reserve
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Training/Organization of Mission Forces	428	393	402
Depot Maintenance	8	9	9
Base Communications	14	15	16
Base Operations	184	192	202
Recruiting	34	37	40
Management Support	37	46	46
Total Program	705	692	715

TABLE 6.13

Army Family Housing:



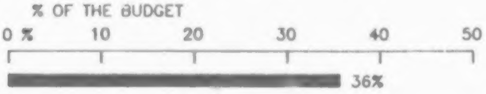
The Army Family Housing appropriation is shown in Table 6.14. Real growth is primarily in the leasing and operations and maintenance accounts. Funds provide for new construction at Sierra Army Depot, California and at Babenhausen and Mainz, Germany. The request will provide a program to upgrade substandard housing units ($11 million), renew existing inventory ($48 million), make partial improvements to current inventory ($31 million) and provide Energy Conservation Investment Program projects ($20 million). Additionally, the budget represents authorization for 19,500 leases which support the needs of forward deployed soldiers and provide housing for civilians living in Panama and Korea.

Army Family Housing
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
New Construction	21	66	34
Improvements	107	107	123
Operation & Maintenance	844	981	1,141
Leasing	67	84	107
Total Program	1,039	1,238	1,405

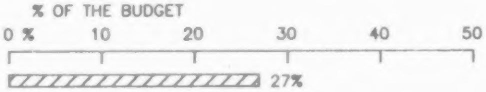
TABLE 6.14

INVESTMENT -- $31.2 BILLION



Approximately 36 percent of the FY 85 budget is requested for investment programs: procurement; research, development, test and evaluation; and military construction.

Procurement



The FY 85 procurement appropriation requests are shown in Table 6.15. They seek to balance procurement for near-term force readiness with long-term modernization needs.

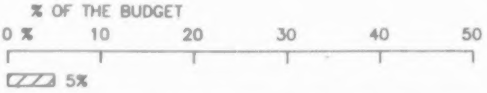
Procurement Overview
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Aircraft Procurement, Army	2,498	3,273	4,008
Missile Procurement, Army	2,683	2,824	3,442
Procurement of Weapons & Tracked Combat Vehicles, Army	4,597	4,663	5,093
Procurement of Ammunition, Army	2,124	1,940	2,494
Other Procurement, Army	4,007	4,650	6,022
Total Program	15,909	17,350	21,060

NOTE: Columns may not add due to rounding.

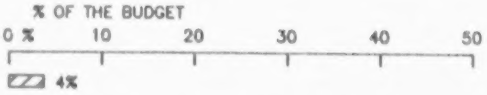
TABLE 6.15

Aircraft Procurement, Army:



This request will provide funds to procure: 144 APACHE (AH-64) aircraft; 78 BLACK HAWK (UH-60A) aircraft; 18 QUICK FIX II (EH-60A). Each of these procurements include spares and related long lead time engines and avionics equipment. It will also fund the modernization of CH-47D Chinook medium lift helicopters, the Army Helicopter Improvement Program (AHIP), modifications of other fielded aircraft, and support equipment and facilities.

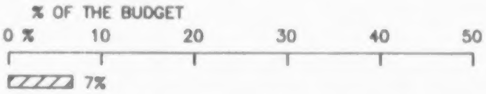
Missile Procurement, Army:



This account includes funds to procure: 585 Patriot missiles with 15 fire units; 2,360 Stinger missiles; 50,472 Multiple Launch Rockets with 44 launchers; 93 Pershing II missiles; and associated support equipment. The request also includes funds for modification of TOW II, HAWK, and Chaparral.

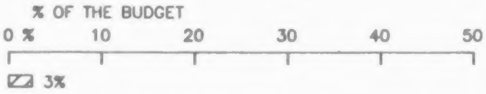
Funds are also included to procure air defense targets, to provide missile system support items, to improve the production base, and to obtain spares and repair parts for procurement and modification programs.

Procurement of Weapons and Tracked Combat Vehicles, Army:



This account funds continued procurement of the Abrams tank (720), 710 Bradley Fighting Vehicles, and their supporting systems. Procurement of Unit Conduct-Of-Fire Trainers for our armored vehicles is also included. Modification programs include the M113 armored personnel carrier family of vehicles, M60 tanks, and the M109 series 155mm self-propelled howitzer. FY 85 funds also procure the squad automatic weapon and spares and repair parts to support new systems and fielded equipment.

Procurement of Ammunition, Army:

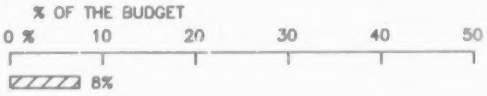


This account includes two major programs: ammunition hardware and production base support.

Funds for ammunition hardware provide for the Army's entire family of tanks; various types of 8-inch and 155mm artillery ammunition, mainly consisting of new improved conventional munitions, rocket-assisted projectiles, and artillery-delivered mines. Funding is also included for training ammunition and for procurement of the binary chemical round.

Ammunition production base support funds provide for modernization of existing World War II facilities and for expansion of the production base required to provide production capability for new modernized munitions

Other Procurement, Army:



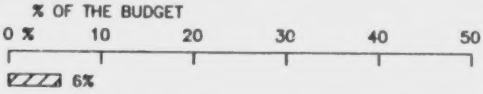
Other Procurement, Army (OPA) funds tactical and support vehicles, communications and electronics, and other support equipment.

Funds for tactical and support vehicles provide for 1,181 10-ton trucks to accomplish ammunition resupply, refueling and to support systems such as MLRS, Pershing II, Patriot and the SGT York gun. This request includes funds for 4,789 5-ton trucks which are required to fill unit shortages and to support systems such as the Abrams tank, BFVS, Patriot, and Tacfire. In addition, this request includes funds for 11,567 HMMWV's and 22,875 CUCV's which fill some unit shortages and support the fielding of new equipment.

The communications-electronic equipment constitutes close to 50 percent of the Other Procurement, Army appropriation request. Major equipment programs funded are the joint tactical communications program, combat support communications, satellite communications, automatic data processing equipment, tactical electronics, communications security and intelligence support.

The other support equipment category will procure a variety of construction items, material-handling equipment, generators, medical equipment and other items that increase our battlefield support capability. It also will provide replacement items for some peacetime losses of equipment in the current support equipment inventory.

Research, Development, Test and Evaluation



The major program areas of the Army FY 85 Research, Development, Test and Evaluation (RDTE) appropriation are shown in Table 6.16.

Research, Development, Test and Evaluation, Army
($ in Millions)

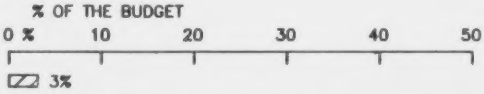
	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Technology Base	675	687	788
Advanced Technology Development	257	318	557
Strategic Programs	571	515	227
Tactical Programs	1,500	1,814	2,330
Intelligence and Communication	76	77	68
Defense-wide Mission Support	816	849	1,018
Total Program	3,895	4,259	4,987

NOTE: Columns may not add due to rounding.

TABLE 6.16

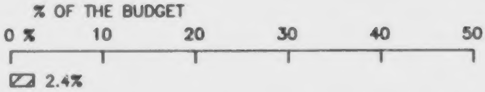
The growth in the technology base provides for keeping pace with expanding technology, prepares for new weapons options, and attempts to preclude technological surprise. The FY 85 RDTE Budget emphasizes five major areas: the continuation of the Army modernization program which includes the upgrade of fielded weapons systems through product improvement; the five technology thrusts; the High Technology Light Division and the Army Development and Employment Activity; target acquisition/deep attack capabilities; and, command, control, electronic warfare, and early warning systems. These programs will provide a modernized force over the long term and a technology and development base upon which we can continue to build a technologically superior Army to counter the growing threat and accomplish the Army's multiple missions.

Military Construction



This portion of the budget includes funds for construction to support operations and training, tactical and support maintenance, hospitals, other medical requirements, troop housing, and military community needs. Funds are also included for the planning and design of future programs, unspecified minor construction projects, energy conservation, and pollution abatement.

Military Construction, Army:



The FY 85 Military Construction, Army (MCA) appropriation request is shown in Table 6.17.

Military Construction, Army
($ in Millions)

Facility Category	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Operations & Training	132	216	381
Maintenance & Production	246	332	416
Research & Development	5	35	48
Supply & Administration	7	59	128
Hospital & Medical	55	23	165
Troop Housing/Community Support	206	283	338
Utilities/Land Improvement	104	125	191
Real Estate	0	4	10
Planning Design/Minor Construction	175	203	223
Other	0	-96	0
Total Program	930	1,184	1,900

TABLE 6.17

The FY 85 request of $1,900 million contains $1,866.5 million for major construction, $33 million for exigent minor construction, and $.5 million for access roads and other support. Approximately 31 percent is for construction overseas, primarily in Germany and Korea, 57 percent is for construction in the United States, the remaining 12 percent is for planning and design, exigent minor construction, and access roads. The FY 85 budget is dual driven by renewal of deteriorated and obsolete facilities and facilities to meet Army force structure and modernization initiatives. Highlights of this year's budget are:

- Investment of $1 billion is for rehabilitation and renewal of existing WWII, Korean quonset and deteriorating and obsolete German facilities.

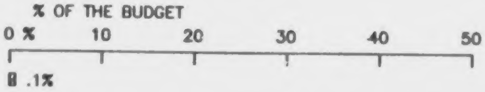
- Maintenance and production facilities include $315 million to modernize facilities to construct tactical equipment maintenance shops, aircraft maintenance hangars and maintenance division complexes in support of Division 86.

- Includes $215 million for operational facilities and $166 million for training facilities.

- Includes $165 million to provide quality health care through hospital and clinic renovation and renewal and completion of the final phase of Tripler Medical Center.

- Includes $277 million for unaccompanied housing and supporting facilities and $61 million for community facilities.

Military Construction, Army National Guard:



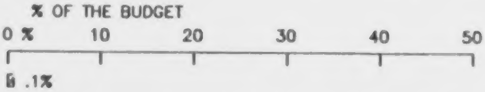
The FY 85 request for Military Construction, Army National Guard provides for 50 major projects. Included in the major projects are 27 armories, 6 aviation facilities, 4 training facilities, 9 equipment maintenance facilities, 3 U. S. property and fiscal office facilities, and one land acquisition. Table 6.18 displays the MCARNG appropriation by major category.

Military Construction, Army National Guard
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Armory	23	28	28
Non-armory	21	29	33
Minor Construction	8	8	19
Planning and Design	3	3	9
Total Program	55	68	89

TABLE 6.18

Military Construction, Army Reserve:



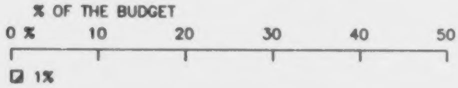
The FY 85 Military Construction, Army Reserve (MCAR) request of $70 million will provide for the major construction, minor construction, and the planning and design of Army Reserve facilities. Categories of major construction projects to be undertaken in FY 85 are 6 Reserve Centers, expansion of 24 existing facilities, and 2 multi-purpose field training sites. The FY 85 budget will modestly reduce the Military Construction, Army Reserve backlog to $850 million. Table 6.19 displays the MCAR appropriation by major category.

Military Construction, Army Reserve
($ in Millions)

	FY 83 ACTUAL	FY 84 ESTIMATE	FY 85 REQUEST
Major Construction	29	42	56
Minor Construction	4	5	6
Planning and Design	9	8	8
Total Program	42	55	70

TABLE 6.19

STOCK FUND -- $366 MILLION



Stock Fund War Reserves level of $210 million are for inventories of secondary items procured to satisfy wartime requirements from the time a conflict begins until the production base can directly satisfy consumption demands. These stock fund war reserve items are critical for support of the individual soldier as well as for major weapons systems. The FY 85 level will buy such commodities as Class IX repair parts, chemical defense equipment, cold weather clothing and medical/dental equipment, repair parts and supplies.

Peacetime Stock Fund Inventories level of $156 million provide repair parts needed to support weapons systems which will be introduced into the inventory in the near future as we modernize and transition to the Army of tomorrow.

JOHN O. MARSH, JR.

SECRETARY OF THE ARMY

Mr. John O. Marsh, Jr. was born in Winchester, Virginia on August 7, 1926. He attended public schools in Harrisonburg, Virginia and entered the United States Army in 1944. The following year, Mr. Marsh received a commission as a second lieutenant of Infantry through the Infantry Officer Candidate School, and subsequently served with United States Army occupation forces in Germany.

In 1951, Mr. Marsh was awarded an LL.B degree by Washington and Lee University, Lexington, Virginia. Subsequently, he was admitted to the Virginia Bar and commenced the practice of law in Strasburg, Virginia. Elected to Congress in 1963 from Virginia's 7th District, Mr. Marsh served four terms in the House of Representatives and was appointed to the House Appropriations Committee. In 1971, he elected to return to private life and opened a law office in Washington, D.C.

In 1973, Mr. Marsh returned to federal service as Assistant Secretary of Defense for Legislative Affairs. In January 1974, he became Vice President Ford's Assistant for National Security Affairs. From August 1974 through January 1977, Mr. Marsh served as Counselor, with cabinet rank, to President Ford.

Returning to private life in January 1977, Mr. Marsh reentered the practice of law, working most recently with the firm of Mays, Valentine, Davenport and Moore of Richmond, Virginia. In 1981, he returned to federal service as Secretary of the Army in President Reagan's administration.

Mr. Marsh served in the United States Army Reserve from 1947 through 1951. Subsequently, he became an active member of the Virginia National Guard, retiring in 1976 with the rank of Lieutenant Colonel. During his service with the Reserve Components, Mr. Marsh completed airborne and jumpmaster training at Fort Benning, Georgia, and earned the senior parachutist rating.

Frequently recognized for public service, Mr. Marsh's awards include the Department of Defense Distinguished Public Service Medal, the American Legion Distinguished Service Medal, and the National Guard Distinguished Service Award.

Mr. Marsh is married to the former Glenn Ann Patterson. They have three children: Becky; Rob, a captain in the Army Reserve, who has recently completed medical school and is on active duty as a physician; and Scot, a graduate of the Virginia Military Institute, who is an instructor in the Engineering Department at VMI and a platoon leader in the Stonewall Brigade of the Virginia National Guard.

GENERAL JOHN A. WICKHAM, JR.

CHIEF OF STAFF
UNITED STATES ARMY

General Wickham was born in Dobbs Ferry, New York, on 25 June 1928. He was commissioned a second lieutenant and awarded a Bachelor of Science degree in Military Science in 1950 from the United States Military Academy. He also holds a Masters of Public Administration degree and a Masters of Arts degree in Political Economy and Government from Harvard University. His military schooling includes the Infantry School, United States Army Command and General Staff College, Armed Forces Staff College, and the National War College.

He has held a wide variety of command and staff assignments, including twelve years in joint and allied headquarters. General Wickham has had three tours of duty with the Joint Staff, the last as Director. He served two Secretaries of Defense as Senior Military Assistant. His extensive overseas service includes six tours, two each in Germany, Korea, and Vietnam. During his last tour in Vietnam he served as deputy negotiator on peace treaty issues with North Vietnamese and Viet Cong military leaders.

He commanded an Infantry Battalion with the 1st Cavalry Division in Vietnam. In Germany he was a Brigade Commander and Division Chief of Staff with the 3d Infantry Division. He commanded the 101st Airborne Division (Air Assault) and deployed the division with most of its equipment to Europe for allied maneuvers in REFORGER 1976. During his last tour in the Republic of Korea, he was Commander of the Eighth United States Army and United States Forces, Korea; Commander in Chief of the United Nations Command with responsibility for enforcing the Armistice; and Commander in Chief of the ROK-US Combined Forces Command consisting of over 1/2 million military personnel. General Wickham left Korea and assumed the duties of Vice Chief of Staff, Army effective 17 June 1982. General Wickham became the 30th Chief of Staff of the Army on 22 June 1983.

His awards include the Defense Distinguished Service Medal (with 2 Oak Leaf Clusters), Army Distinguished Service Medal, Silver Star (with Oak Leaf Cluster), Legion of Merit (with 3 Oak Leaf Clusters), Bronze Star Medal with V Device, Meritorious Service Medal, Air Medal (11), Army Commendation Medal, Purple Heart, Expert Infantryman Badge, Combat Infantryman Badge, Parachutist Badge, Air Assault Badge, Secretary of Defense Identification Badge, and the Army General Staff Identification Badge. His foreign awards include the Republic of Korea Taegueg Medal, the highest Korean military decoration.

General Wickham is married to the former Ann Lindsley Prior. They have three children: Lindsley, 1LT John A., III (United States Army), and Matthew.

INTRODUCTION OF GENERAL WICKHAM

Senator STEVENS. Please proceed, Mr. Secretary.

Secretary MARSH. Thank you, Mr. Chairman and members of the committee.

As you have noted, this is General Wickham's first appearance here.

It is a pleasure for me to be here and meet with the committee and I thank you for the help and assistance you have given me in the past.

I am sure you will find General Wickham to be a very helpful and very thoughtful soldier whose views you will come to admire and respect. You outlined his career. I would mention two other points.

General Wickham was badly wounded in Vietnam and was decorated for valor.

He also served as military assistant to the Secretary of Defense, one of the most critical and essential positions in the entire Department of Defense. He has already brought enormous help to the Army in the short time he has been the Chief of Staff.

BUDGET REQUEST

As you gave a summary of the Army's budget request, I would point out you will find $6.7 billion of the $77.9 billion total relates to the retired fund. Under the new system this is included in our budget. If you would remove from $77.9 billion that amount of money, you will find that the real growth for the Army budget this year is approximately $10.2 billion.

RANGERS PERFORMANCE IN GRENADA

When you look at that Army budget and what has happened to it in the last several years, I would mention to the committee a point in reference to Grenada.

When you look at the form of the U.S. forces there, several factors leap out. I point to the performance of the two battalions of Rangers. We introduced 1,300 Rangers into Grenada. Only 31 of those Rangers had any combat experience, 7 officers and 24 noncommissioned officers.

No noncommissioned officers below the grade of E-5 had combat experience. Nothwithstanding that, because of the ability of those individuals, the quality of the soldiers, their training, and their leadership, they performed magnificently in their first introduction to combat.

I think that tells us something about what can be done when we have the leadership and equipment and quality of people that we see today in the Army. The capability recently demonstrated by the Army reflects the help of the U.S. Congress.

The Army is improving. There is much more that needs to be done.

SLIDE DEMONSTRATION

In this job I bring myself to the question of why do we do this? Let me show you a slide that I think probably tells us better than anything else why it is so essential that we have a strong defense capability and illustrates many of the problems that impact on the Army.

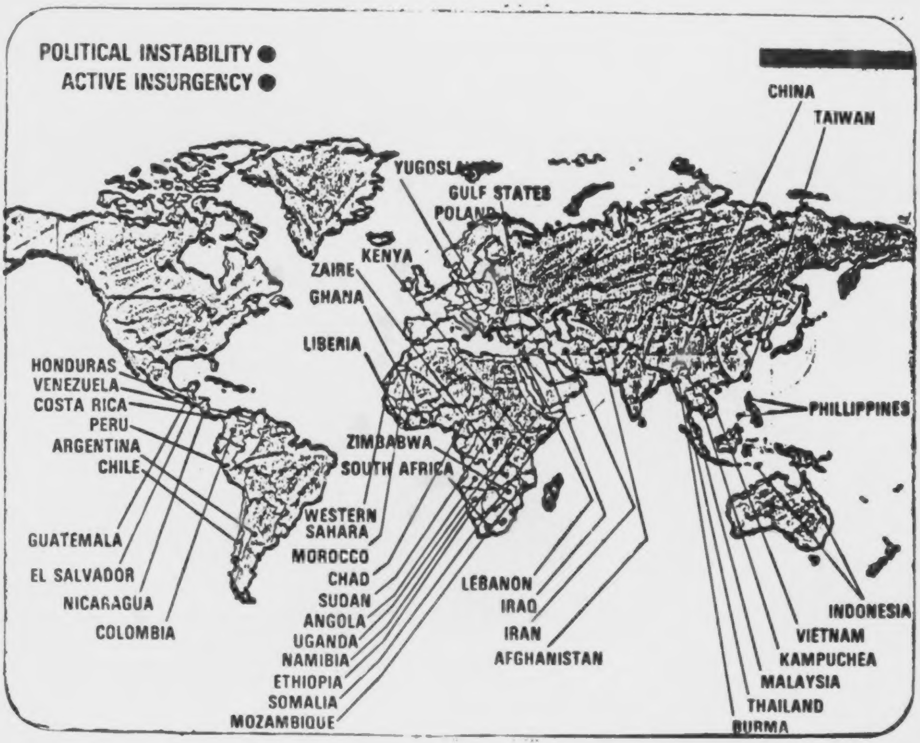

POLITICAL INSTABILITY ●
ACTIVE INSURGENCY ●
YUGOSLA
GULF STATES
POLAND
KENYA
ZAIRE
GHANA
LIBERIA
CHINA
TAIWAN
PHILLIPPINES
HONDURAS
VENEZUELA
COSTA RICA
PERU
ARGENTINA
CHILE
GUATEMALA
EL SALVADOR
NICARAGUA
COLOMBIA
ZIMBABWA
SOUTH AFRICA
WESTERN SAHARA
MOROCCO
CHAD
SUDAN
ANGOLA
UGANDA
NAMIBIA
ETHIOPIA
SOMALIA
MOZAMBIQUE
LEBANON
IRAQ
IRAN
AFGHANISTAN
INDONESIA
VIETNAM
KAMPUCHEA
MALAYSIA
THAILAND
BURMA

CHART 1

WORLDWIDE INSURGENCIES AND POLITICAL INSTABILITIES

We show here those areas of the world in which there are ongoing insurgencies.

We show here those areas in the world in which there are political instabilities. When these instabilities become insurgencies, it exacerbates the problem.

If you look at the world today, you would have to say that the most likely adversary we could have—and the chief troublemaker in the world today—is the Soviet Union, although not all the problems that I indicated in the earlier chart are of Soviet origin.

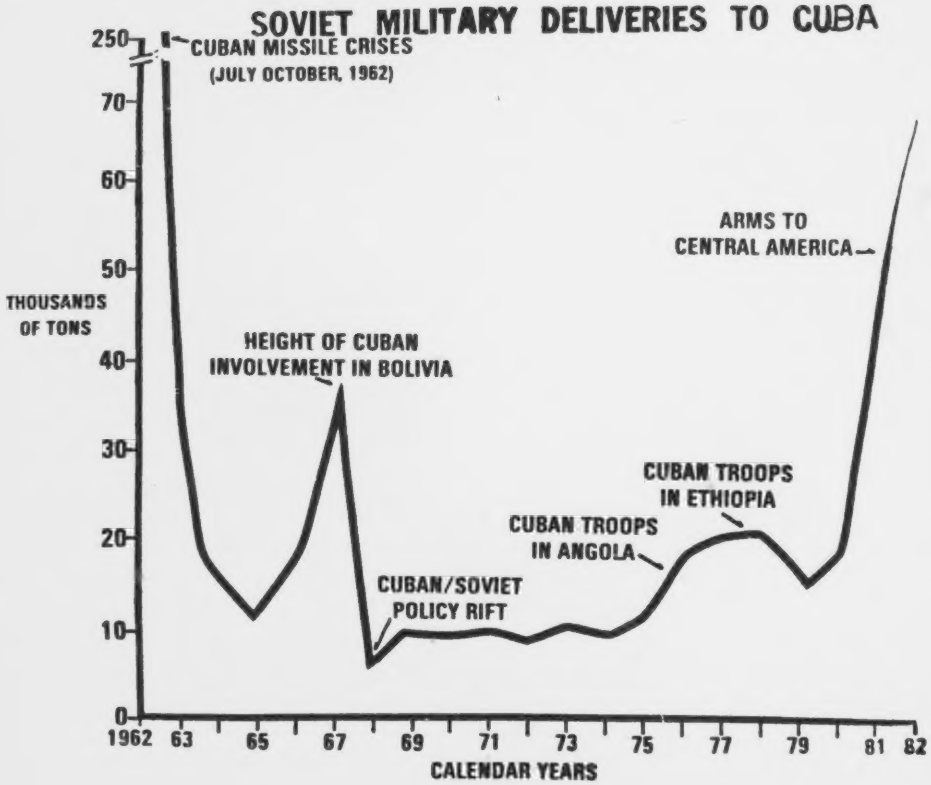


CHART 2

SOVIET ADVENTURISM IN WESTERN HEMISPHERE

Nevertheless, this chart shows Soviet adventurism in our own hemisphere beginning in 1962. Thousands of tons of supplies were furnished to Cuba from 1962 to 1982. You can see this enormous interest in Cuba and the investment of Soviet military equipment in this area.

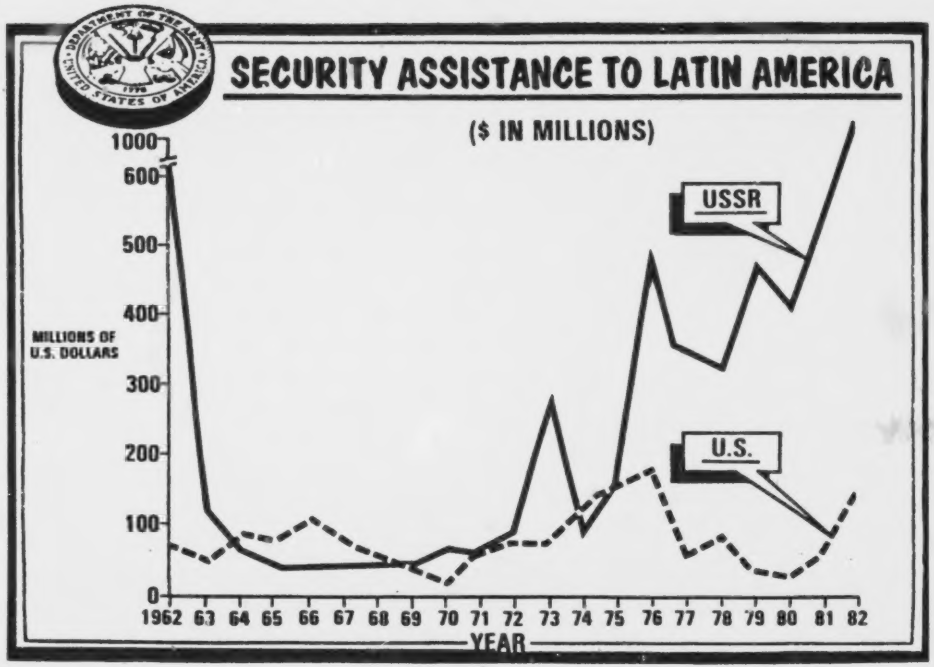
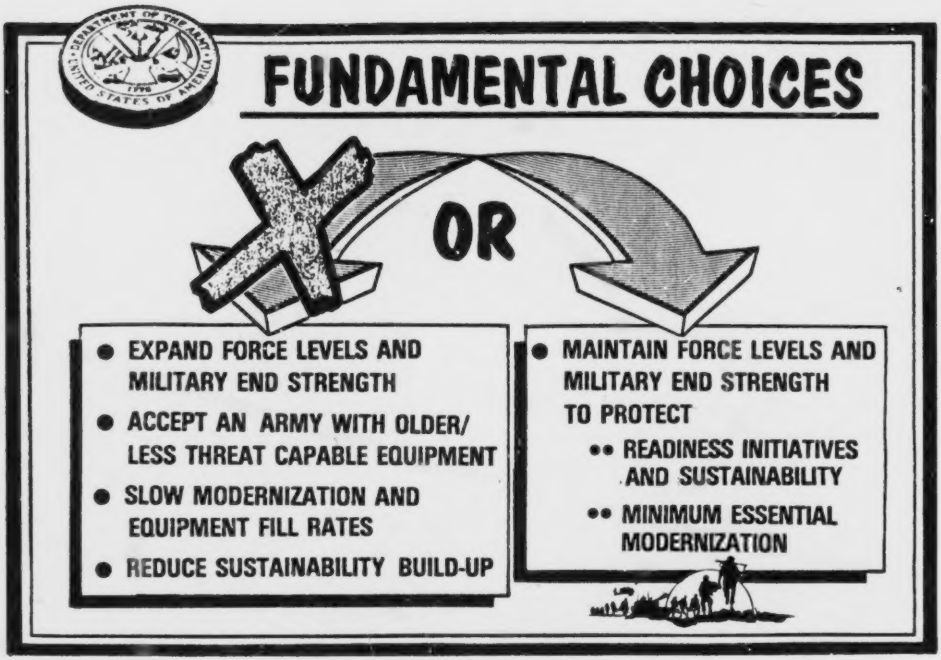


CHART 3

UNITED STATES AND SOVIET INVESTMENT DOLLARS

The next chart translates this into dollars. The $1 billion mark is here and $600 million is here. The dark line shows Soviet investments in security assistance in Latin America through the year 1982, and the broken line here shows U.S. investment in that area of the world in that same period of time.



FUNDAMENTAL CHOICES

OR

- EXPAND FORCE LEVELS AND MILITARY END STRENGTH
- ACCEPT AN ARMY WITH OLDER/ LESS THREAT CAPABLE EQUIPMENT
- SLOW MODERNIZATION AND EQUIPMENT FILL RATES
- REDUCE SUSTAINABILITY BUILD-UP

- MAINTAIN FORCE LEVELS AND MILITARY END STRENGTH TO PROTECT
  - READINESS INITIATIVES AND SUSTAINABILITY
  - MINIMUM ESSENTIAL MODERNIZATION

Chart 4

EXPANSION OF ARMY FORCE STRUCTURE

This next chart, although deceptively simple, reflects a fundamental decision that was made in the Department of the Army in 1981 at the recommendation of the Army General Staff and the Chief of Staff, General Meyer.

I approved this and presented it to the Defense Resources Board, because in 1981 we had to make a choice.

One, we could decide whether or not the Army would expand its force structure, and increase its numbers and its units. This would mean that we would not get the equipment that we need, we would not be able to modernize, and we would not be able to sustain the force.

We decided that we would take this other road that would maintain a flat end strength. We would keep the size of the Army at roughly the same size and we would concentrate on readiness and sustaining that force and we would continue to implement a program of modernization.

The decision has been made that we will keep the U.S. Army at a strength of about 780,800 for the rest of the decade.

As a part of that decision and the decision to go with the All-Volunteer Force in the 1970's, we need to mention the growing role of the Guard and Reserve.

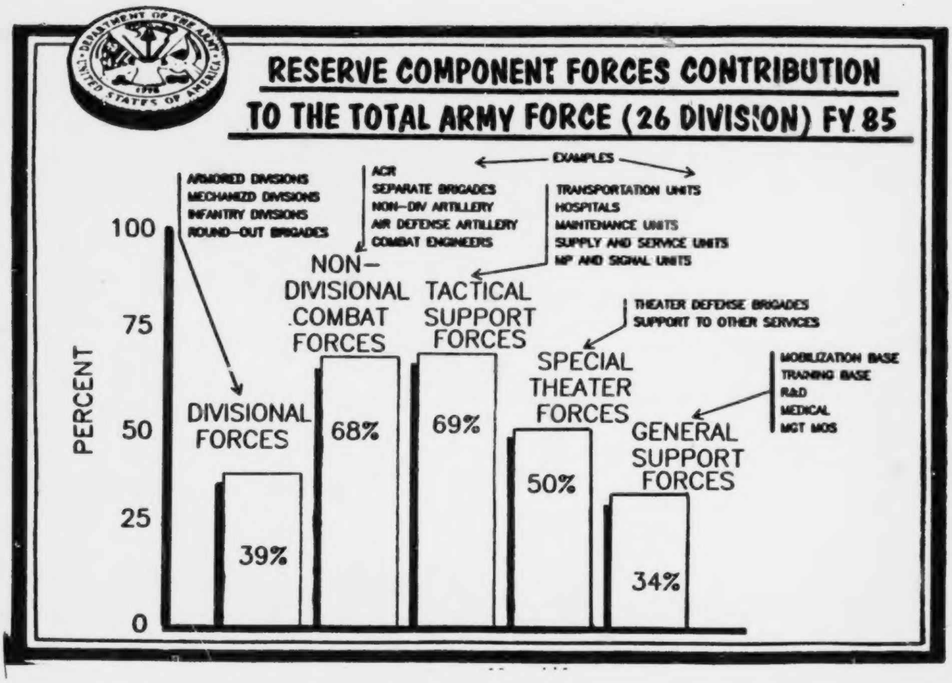


CHART 5

EMPHASIS ON GUARD AND RESERVE FORCES

This chart will show you the enormous emphasis that we are placing on the National Guard and on the Reserve in the Army today; 39 percent of our division forces are in the Guard.

Of the nondivision combat forces, 68 percent are in our Reserve component; tactical support forces, 69 percent are in the Guard and Reserve; special theater forces, 50 percent; and of the general support forces here, about one-third.

So, this shows the tremendous emphasis that we place on the Guard and the Reserve.

As you look at the Army, you will have to say that our primary responsibility is one of people. We are manpower intensive.

I can say to you that in 1983 we recruited 88 percent high school graduates and 12 percent in category IV, the lower mental category testing level of the Army entry test. We are not unmindful of the economic conditions and we are watching our force very closely because we recognize that the economy does play a role in recruiting. It is something that we are monitoring because we see the threshold traffic is down in all services. Consequently, we are watching it very carefully.

When you recruit the kind of people in the Army that we have today, the result is favorable disciplinary factors.

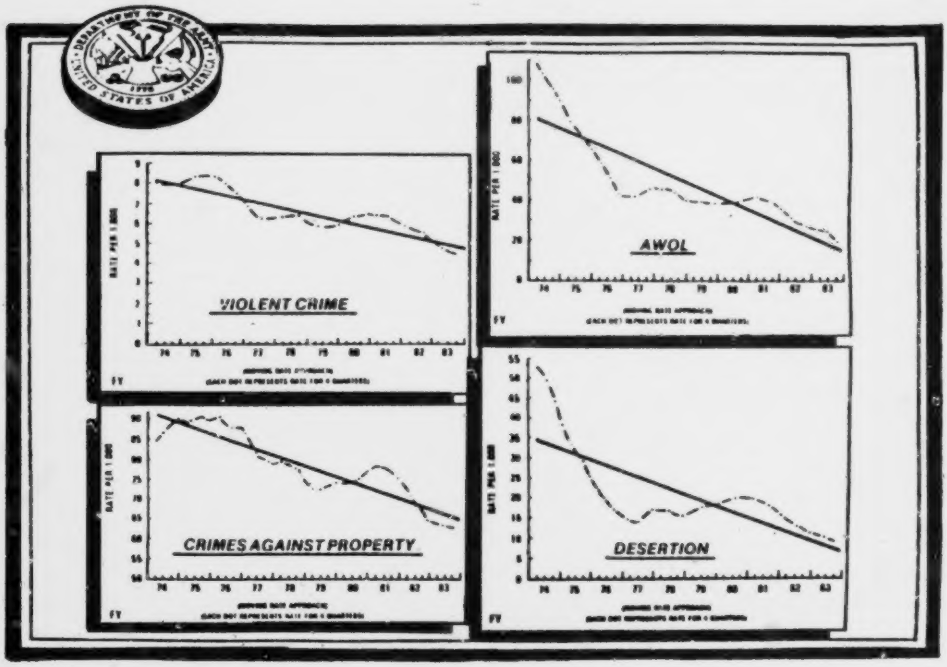


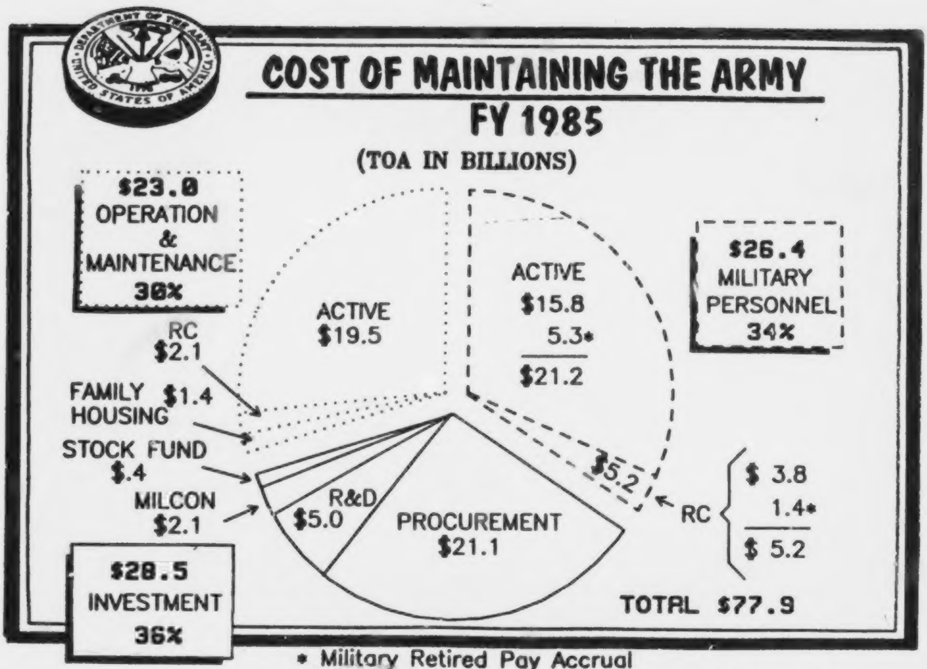
Chart 6

VIOLENT CRIMES IN ARMY

This chart shows the trend in violent crimes in the Army, crimes against property, and AWOL rates. These are the lowest we have ever had in the U.S. Army and the desertion rates today are the lowest we have ever had in the Army. So, you see we are beginning to make considerable progress in readiness.

We know that we cannot match the Soviets man for man or tank for tank. What we seek to do is take a force, equip it with able people, provide good leadership and good plans so that we will be able to leverage that force. As a result, those who see that force perceive a force that has a capability far greater than its numbers.

As part of this, we will begin to move in the light-forces concept. Several years ago we began increasing our special forces. Now we are moving into the light-division concept in order to be able to deploy rapidly. General Wickham will discuss that in greater detail.



* Military Retired Pay Accrual
NOTE: Total Does Not Add Due To Rounding

CHART 7

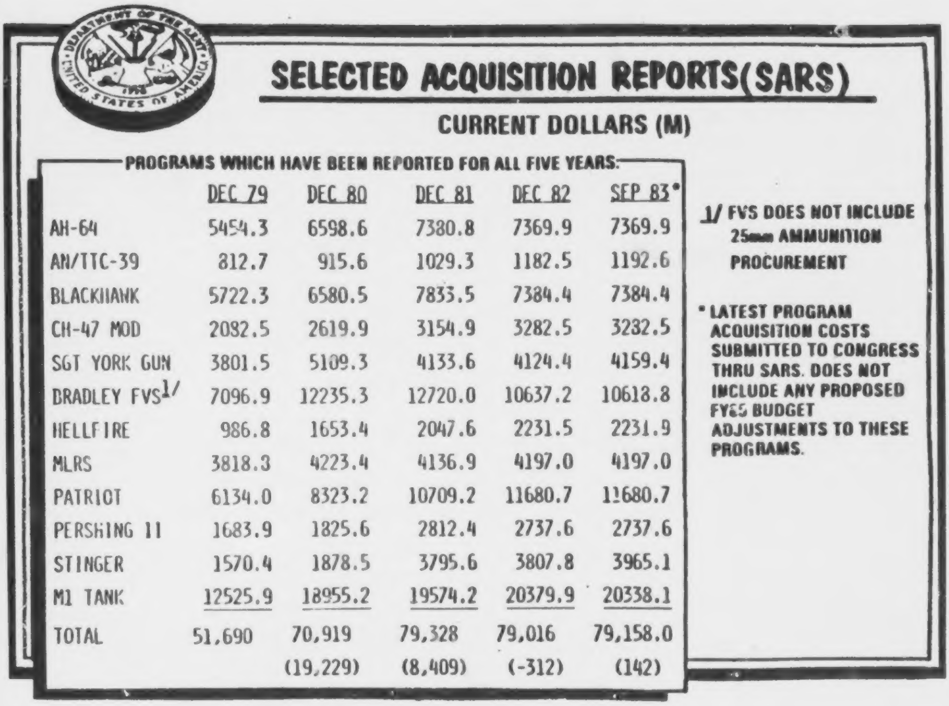
PIE CHART BREAKOUT

If you look at this chart of the budget that we have this year—what we call the pie chart—you will see an interesting breakout. It used to be that between operation and maintenance, the investment account and military personnel it was almost a third in the Army.

You are seeing now a greater increase in the investment account. It is 36 percent, and had you not moved the retirement fund into the Army budget, that investment account would be about 40 percent of the total. You can see our emphasis on procurement here.

We also talk about the needs of the Reserve components. Notice that you are looking at a $5 billion slice here; $2 billion of this slice is in operation and maintenance. Out of this procurement pie we plan to put $1.4 billion in modernization in the Guard and Reserve this year. This will be in either modernized or new equipment.

The military personnel account still remains a very significant amount as I mentioned earlier.



SELECTED ACQUISITION REPORTS(SARS)

CURRENT DOLLARS (M)

PROGRAMS WHICH HAVE BEEN REPORTED FOR ALL FIVE YEARS:

	DEC 79	DEC 80	DEC 81	DEC 82	SEP 83*
AH-64	5454.3	6598.6	7380.8	7369.9	7369.9
AN/TTC-39	812.7	915.6	1029.3	1182.5	1192.6
BLACKHAWK	5722.3	6580.5	7833.5	7384.4	7384.4
CH-47 MOD	2082.5	2619.9	3154.9	3282.5	3232.5
SGT YORK GUN	3801.5	5109.3	4133.6	4124.4	4159.4
BRADLEY FVS1/	7096.9	12235.3	12720.0	10637.2	10618.8
HELLFIRE	986.8	1653.4	2047.6	2231.5	2231.9
MLRS	3818.3	4223.4	4136.9	4197.0	4197.0
PATRIOT	6134.0	8323.2	10709.2	11680.7	11680.7
PERSHING II	1683.9	1825.6	2812.4	2737.6	2737.6
STINGER	1570.4	1878.5	3795.6	3807.8	3965.1
M1 TANK	12525.9	18955.2	19574.2	20379.9	20338.1
TOTAL	51,690	70,919	79,328	79,016	79,158.0
		(19,229)	(8,409)	(-312)	(142)

1/ FVS DOES NOT INCLUDE 25mm AMMUNITION PROCUREMENT

*** LATEST PROGRAM ACQUISITION COSTS SUBMITTED TO CONGRESS THRU SARS. DOES NOT INCLUDE ANY PROPOSED FY85 BUDGET ADJUSTMENTS TO THESE PROGRAMS.**

CHART 8

MANAGEMENT OF ARMY BUDGET

Let me mention to you something about the management of the Army budget which we think is helpful. This chart is not a complete story on cost-control systems, but it does tell us that we are beginning to at least get some discipline into the system.

These are the 12 major systems that we are required to report to you on a regular basis with regard to their cost and their investments. The key part here is this bottom line.

In December 1979, you saw that we were investing about $51.5 billion. In the following year, 1980, there was a growth of $19 billion. The following year, from 1980 to 1981, there was a growth of $8.5 billion.

Now, notice that from 1981 through 1983 the total dollar expenditure for these systems has stayed constant at $79 billion. There was a minus net growth in 1982. The growth in 1983 was only $142 million for those same systems.

I give credit for that in large measure to the Under Secretary of the Army, Jim Ambrose. He has managed these systems by introducing discipline and trying to contain costs, because we are as concerned as you are with this aspect of our defense budget.

DEPLOYMENT CAPABILITY

Finally, if you would ask me the needs we have, I would say to you that we need the capability to deploy our forces by sea and air and we need inter- and intra-theater lift. We need to focus on our mobilization capabilities. I would also say to you that if there is a downside with regard to capabilities between ourselves and the Soviets, it would be in the field of chemical warfare. It is there that our retaliatory capability is lacking.

Finally, I would remind this committee that this coming June marks the 40th anniversary of the invasion of Normandy. The performance and capability of that great Army there on the beaches of Normandy, I believe, reflect the spirit and capability of the U.S. Army today.

It is a pleasure to be here and I look forward to your questions.

Senator STEVENS. Thank you, Mr. Secretary.

[The prepared statement of Secretary Marsh follows:]

PREPARED STATEMENT OF HON. JOHN O. MARSH, JR.

SECRETARY OF THE ARMY

Mr. Chairman, Members of the Committee:

It is my privilege to discuss the posture of the Army and the direction we are heading to meet the challenges of the future. I would like to express my appreciation for the attention and support you have given Army needs in the past. I look forward to working with you in continuing the momentum of the past years in developing an Army capable of preserving our fundamental freedoms and defending our National Interests.

As the principal manager of the Army, responsible for all of its multiple activities, I am very much concerned with the stewardship of funds provided us by Congress. Our Total Army -- Active, Reserve, and Civilian Components -- is committed to using its assets effectively and efficiently to improve force readiness, achieve needed modernization, and support our soldiers in the most efficient manner possible.

To achieve these goals, the Army is requesting in FY85 total obligation authority of $77.9 billion, which represents real growth in constant FY85 dollars of 10.2 percent. This budget has been formulated with care, and contains only those programs absolutely necessary for maintaining the strength and effectiveness of our land forces.

In formulating the FY85 budget request, we were fully cognizant of the growing federal deficit. Defense and the Army are concerned with this deficit; since the fall of 1981, defense spending has been cut back significantly. The original build-up plan for defense was estimated to add $116 billion to outlays for the years FY82 to FY86 over the total estimated by the previous administration. To date over $79 billion -- $19.7 billion for the Army - of that outlay increment has been removed through a series of reductions and economies of operations, as well as by Congress. We are looking at a different spending plan now than we were when President Reagan took office.

We take our stewardship of resources very seriously. When the Army embarked on its equipment buildup in 1981, we made a pledge to use our resources in an efficient and economical manner. The Army can be proud of its management improvement record. This statement unequivocally reaffirms our pledge to pursue an Army of Excellence through an aggressive and innovative management improvement program.

Let me assure you that the Army is in better shape today than it has been for many years. Our program for FY85 will, in turn, improve the condition of the Army substantially. Thanks to your support, we are now able to place greater emphasis on qualitative improvements in developing an Army of Excellence.

While much has been accomplished during these past three years, more remains to be done. The joint posture statement provides a realistic appraisal of the Army's strengths and weaknesses. Working in close partnership with the Congress, the Army seeks to capitalize on its strengths and to reduce its weaknesses while moving the Army closer to its readiness objectives.

Today, I will discuss the Army's progress in achieving excellence. I will also highlight those shortcomings that warrant our combined attention and resources.

But first, I would like to discuss the realities of the international environment within which our Army must be prepared to fight.

The Soviet Union remains the primary threat to the U.S. The Soviets remain dedicated to their single goal of world supremacy. To that end, there has been a substantial quantitative and qualitative improvement in Soviet military equipment. In addition to modernizing its own land forces, the Soviet Union is directing the modernization and restructuring of other Warsaw Pact forces.

Moreover, the Soviet Union consistently exports more military equipment to the Third World than any other country. These military transfers provide the Soviets a valuable entry into many Third World nations.

Additionally, the Soviet Union actively equips and trains surrogate forces, dissidents, and revolutionaries around the world.

In the last 30 years, the Soviets have demonstrated vastly expanded power projection capabilities. A growing blue-water navy, seven highly-mobile airborne divisions, greater strategic airlift and expanded military training assistance programs lend credence to the emphasis the Soviets place upon power projection. Their forces in Afghanistan, and elsewhere in Asia, Africa and in Cuba are testimony to their willingness to exercise this capability.

In response to the global challenges threatening our national security, the Army stands midway in a period of great transition. Virtually every facet and function of the Army are being transformed; its structure and organization, its composition, its training, its equipment, and its operational concepts. Its growing capabilities underscore the role of landpower as an instrument of national policy.

Today's Army is stronger and better equipped than at any time in its recent history. We are proud of this Army, its Active, Guard, Reserve, and civilian members. We believe it is a crucially important part of the successful program of the United States to preserve peace for itself and its allies.

The Army is its people. In today's Army, our manpower needs are being met. Our ranks are being filled with some of the ablest and finest young people this country produces. The true measure of the quality and professionalism of today's American soldier was clearly evidenced in their outstanding performance on Grenada. Much of the credit for the qualitative improvements in our personnel may be attributed to the success of our recruiting and reenlistment programs. Using the high school degree as a gauge of quality, the Army today has the highest educational level in its 208-year history, with some 88 percent high school graduates enlisting in FY83. We are aware that the present economic environment will require a continued strong recruiting effort to maintain the flow of young people into the Army whose abilities match those of previous years.

There are some important spinoffs from these quality accessions. First, our gains in first-term quality soldiers have allowed us to reenlist only the most competent, professional soldiers with demonstrated leadership potential. In turn, these soldiers have helped to fill the enlisted leadership gap. Three years ago we reported significant shortages in our top five enlisted strength. Successful reenlistment programs during this period enabled us to fill many of our shortages with quality soldiers. We should achieve 100 percent fill in our top five enlisted grades by the end of FY84.

Second, our disciplinary record has improved substantially. Two key indicators are the AWOL and desertion rates. Both have declined steadily over the past decade. Last year, the desertion rate was the lowest in over 20 years. The AWOL rate was the lowest on record.

Quality accessions are only part of the manning equation. The Army realizes full well that although it recruits soldiers, it retains families. In recognizing the importance of the soldier and his/her family to the Total Army family, the theme for the Army in 1984 is "The Army Family."

Likewise there have been significant improvements in our combat readiness. Around the world, our combat forces stand ready to protect our National Interests. Our comprehensive modernization program and our first-to-fight/first-to-be-equipped philosophy have been instrumental in improving the readiness of all components.

But the Soviets have also made considerable progress. If we are to stay abreast of their unprecedented arms buildup, we must continue our modernization efforts. While we do not seek to match the Soviets weapon for weapon or soldier for soldier, we must continue to field high quality equipment which when manned by motivated, highly trained, and physically fit soldiers will serve to counter Soviet numerical advantages.

The worldwide deployment of U. S. soldiers reflects both the realities of our National Interests and the nature of the world environment in which these interests must be protected. Strong land forces serve as a visible and credible signal that the U. S. is prepared and willing to honor its commitments. The Army must have flexible forces, readily tailored to meet one or more simultaneous events. These forces must be strategically deployable for global responses in hostile environments anywhere along the spectrum of conflict. To that end, in addition to restructuring existing Active divisions, we are seeking to add a 17th Active division to the force in FY85.

The Army's programed force structure changes fully support our priorities of readiness, modernization, sustainability and deployability. They also reflect a greater reliance and expanded role for our Reserve Component forces. This is probably the most profound change in the Army over the last 10 years.

As of FY84, nine combat divisions, or 36 percent of the total number of combat divisions, are organized in the National Guard. Two-thirds of the Army's combat service support capability is found in Reserve Component units. We can expect this trend to continue.

Recent events in Grenada, Central America and Southwest Asia highlight the need for additional rapidly deployable, highlytrained, light infantry forces. Toward that end, the Army will begin converting one of its divisions to this configuration in FY85. It is expected that such a force, quickly inserted in the first days of a crisis, could defuse the crisis thereby precluding the deployment of a much larger force later. I strongly support this trend toward lighter, more rapidly deployable infantry forces. General Wickham will discuss the light infantry division in greater detail in his opening comments.

The fiscal year 1985 Army budget will place the Army in a position where it can further improve its capabilities and its contribution to the support of national policy. I would call your attention, however, to several areas where we desire and expect your support in overcoming serious shortfalls.

Of primary concern to the Army is the strategic lift shortfall. Despite recent improvements in our air and sealift capabilities, substantial shortfalls continue to exist for both inter- and intra-theater requirments. For example, our current requirement is to reinforce NATO with 10 divisions in 10 days. Strategic lift shortfalls limit our capability to only six divisions in 10 days. The Army's light division initiative will help decrease our strategic lift shortfall, but even with this effort, our ability to execute a global strategy will remain severely limited.

Closely aligned with deployability is the Army's mobilization capability. Shortfalls exist in our ability to mobilize quickly adequate manpower, particularly those with specialized skills. Our capability to mobilize should improve during FY85 primarily through planned improvements in Reserve Component management, the mobilization base and the industrial base.

The Army continues to identify and correct deficiencies in the capability of CONUS installations to outload early deploying and mobilizing units. Likewise outloading deficiencies at many deployment installations are being corrected. Additional funding is required, however, if we are to be postured in peacetime to facilitate rapid deployment in war.

In terms of the Army's sustainability, prepositioned unit sets of equipment (POMCUS) are inadequate to accommodate follow-on forces. Morever, shortages exist in key war reserve stocks, specifically ammunition, consumable repair parts and personnel support items such as cold weather clothing and medical items. The lethality and tempo of today's battlefield make it critical that adequate quantities of these stocks be on hand. Prepositioned stocks help to reduce the initial demand on our strategic lift assets.

The Soviet Union possesses a formidable and expanding chemical warfare capability. They continue to devote significant resources to research and development of chemical warfare programs. Moreover, they have repeatedly demonstrated a willingness to employ these weapons. In response, our chemical retaliatory capability is inadequate and our decontamination capability is deficient. We recognize explicitly that chemical weapons remain an essential feature of our tactical arsenal and, by their availability, may deter enemy use of them.

If we are to achieve an Army of Excellence, we must devote our efforts and resources to correct these deficiencies. We must dedicate our collective will to the sustainment of our strengths. We must continue the pace of modernization. We must exploit America's technological lead. We must leverage our force by building a Total Army which, when viewed by either friend or foe, is perceived to be an Army far more powerful, far more capable, and far more formidable than its actual numbers indicate. This is the ultimate objective of the programs outlined in the posture statement.

In closing let me add that it often serves to reflect on history to find direction for the future. Next June, we mark the 40th anniversary of the Allied landing at Normandy. The valor of that day lives today in the heroic deeds of those proud American soldiers who rescued their fellow American citizens on the tiny island of Grenada. Let their efforts serve as a beacon to the world that the U. S. stands ready to preserve American freedom wherever it is threatened. This your Army has done. This your Army will do. We ask your help in this great mission.

CHIEF OF STAFF, U.S. ARMY

STATEMENT OF GEN. JOHN A. WICKHAM, JR., CHIEF OF STAFF, U.S. ARMY

ACCOMPANIED BY MAJ. GEN. HAROLD M. DAVIS, JR., DIRECTOR OF THE ARMY BUDGET, OFFICE OF COMPTROLLER OF THE ARMY, DEPARTMENT OF THE ARMY

STABILITY OF CURRENT U.S. ARMY

Senator STEVENS. General Wickham.

General WICKHAM. Mr. Chairman, it is a privilege for me to be before this committee and to render some judgments about the Army.

I promise to you my best stewardship of Army resources and total candor in dealing with Congress.

The Army today that Secretary Marsh talked about is a solid Army. Thanks to the Congress, we are growing stronger in terms of readiness, in terms of improved sustaining capabilities and in terms of modernization.

In my humble opinion, the Army we have today is the best that I have seen in 34 years.

Recently, I decorated some young soldiers that came back from Grenada. I pinned a Purple Heart and Combat Infantry Badge on one young, badly wounded soldier. When the photographers were about to take his picture, he said, "Wait a minute," and reached into his pocket and pulled out a small American flag which had been on his uniform in Grenada. He put that flag above the Combat Infantry Badge and pointed to it and said to the photographers, "Go ahead and take my picture because this is the little flag that I am proudest of."

When we have young men and women like that in our Army, I think the Nation can be proud and the Nation can be reassured that its values will be protected. We have thousands of young men and women like that.

ARMY MODERNIZATION PROGRAM

The Army modernization program, like the people, is improving because we are trying to make our equipment more effective across the board.

STATUS OF M-1 TANK

One case in point is the M-1 tank which has had some difficulties in the past. I think those are all behind us.

That tank is now in some seven battalions in Germany. It has been on two annual REFORGER (return of forces to Germany) exercises and has maintained an operational readiness rate higher than any of the other vehicles.

Last year in tank gunnery competition with all of the other nations in NATO our tanks came in the highest. This is the best we have done in 20 years. I think that gives some illustration of the quality of equipment we are beginning to receive.

We do have some problems with other items of equipment. We are working with industry to try to reduce the dimensions of those problems.

We are moving forward on a number of fronts to foster cohesion throughout the Army because history tells us that units that train together and live together are going to survive better together.

The previous Chief of Staff and the Secretary of the Army started some of these programs. A regimental system where we identified with history and legacy of strong units, fusing companies together so that they can stay together for 3 years are in being.

Those results are producing benefits for the Army.

STRENGTHENING OF MILITARY FAMILY RELATIONSHIPS

We are also working to strengthen the family relationships because the root of high readiness in the unit ultimately rests in strong cohesive families.

There are a number of programs we have started The Secretary and I have designated 1984 as "The Year of the Army Family" to give focus and energy to family programs.

While it is recognized that much of the world we live in is very dangerous, the media reports from Lebanon highlight that, international terrorism touches every one of our lives whether in uniform or not.

MAINTAINING SIZE OF CURRENT ARMY FORCE

Our commitments around the globe probably reflect the changing nature of the world in which we live. We have the smallest Army in 33 years. It will remain small.

As the Secretary indicated, we do not plan through the rest of this decade to increase the size of the Army above the 780,800 that is in this budget before you today. We have a number of commitments:

The traditional commitment in NATO and the Far East.

The heavy side of the Army that is involved in those commitments will continue to be modernized with tanks, Bradley fighting vehicles, and other military equipment.

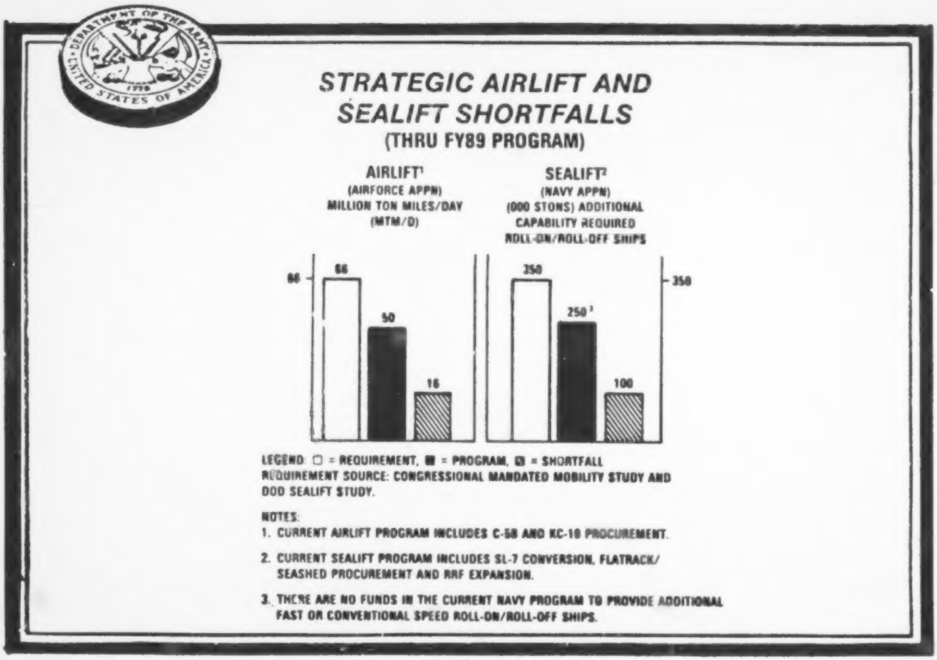
LIGHT SIDE OF ARMY

The light side of the Army that involves commitments for peacekeeping operations such as mobile training teams, we have had some 150 of those teams in 31 countries, and peacekeeping missions.

We have a battalion of infantry in the Sinai which has been there for 2 years. It rotates among divisions. We have maneuver exercises throughout the world. The most recent ones you know have been in Honduras.

These all reflect the changing nature of our commitment and the need for us to look a little more intensively at the light side of the

Army, as the Secretary indicated, to make it more deployable than it is today.



STRATEGIC AIRLIFT AND SEALIFT SHORTFALLS

(THRU FY89 PROGRAM)

LEGEND: ☐ = REQUIREMENT, ■ = PROGRAM, ▨ = SHORTFALL

REQUIREMENT SOURCE: CONGRESSIONAL MANDATED MOBILITY STUDY AND DOD SEALIFT STUDY.

NOTES:

1. CURRENT AIRLIFT PROGRAM INCLUDES C-5B AND KC-10 PROCUREMENT.
2. CURRENT SEALIFT PROGRAM INCLUDES SL-7 CONVERSION, FLATRACK/SEASHED PROCUREMENT AND RRF EXPANSION.
3. THERE ARE NO FUNDS IN THE CURRENT NAVY PROGRAM TO PROVIDE ADDITIONAL FAST OR CONVENTIONAL SPEED ROLL-ON/ROLL-OFF SHIPS.

CHART 9

STRATEGIC AIRLIFT AND SEALIFT REQUIREMENTS

This slide shows strategic airlift and sealift requirements through the 1989 period. It reflects what the Air Force and Navy are trying to procure through the budgets they will be submitting.

This is the requirement for strategic airlift. This is what will be provided in the Air Force capabilities, both extant and proposed in the budget.

There is going to be a shortfall of 16 million ton-miles per day by 1989.

In the sealift area, similarly, a 100-million-ton shortfall will exist.

Now, there is something we can do about that on the Army side to compensate for that kind of shortfall. As the Secretary indicated, we have been looking for a couple of years at trying to make some of our light divisions even lighter.

One concept we are proposing in this budget is transforming one of our divisions into a more lethal but lighter infantry division.

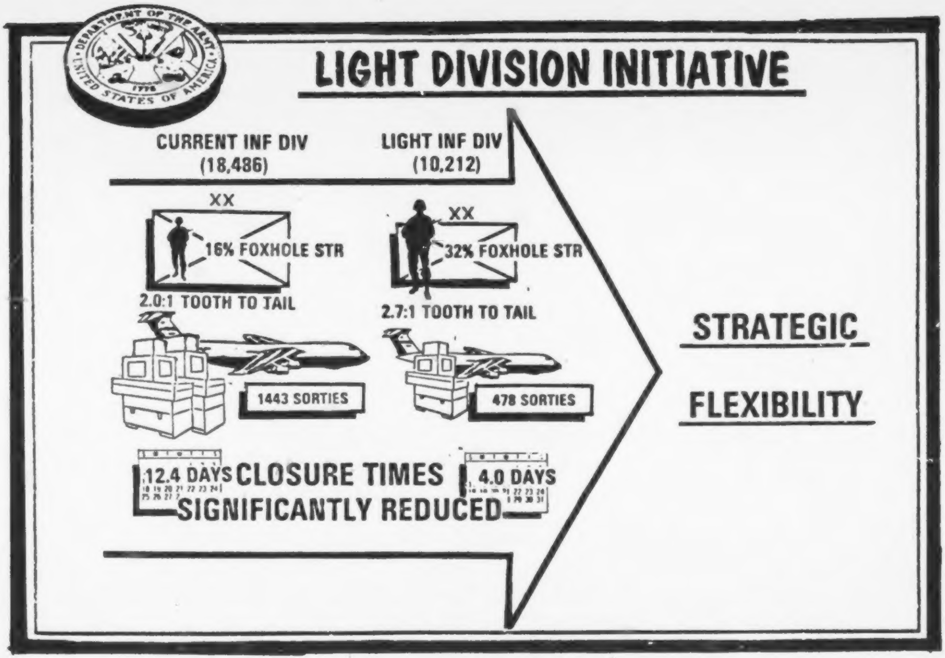

LIGHT DIVISION INITIATIVE
CURRENT INF DIV
(18,486)
LIGHT INF DIV
(10,212)
XX
16% FOXHOLE STR
2.0:1 TOOTH TO TAIL
1443 SORTIES
XX
32% FOXHOLE STR
2.7:1 TOOTH TO TAIL
478 SORTIES
12.4 DAYS
CLOSURE TIMES
4.0 DAYS
SIGNIFICANTLY REDUCED
STRATEGIC
FLEXIBILITY

Chart 10

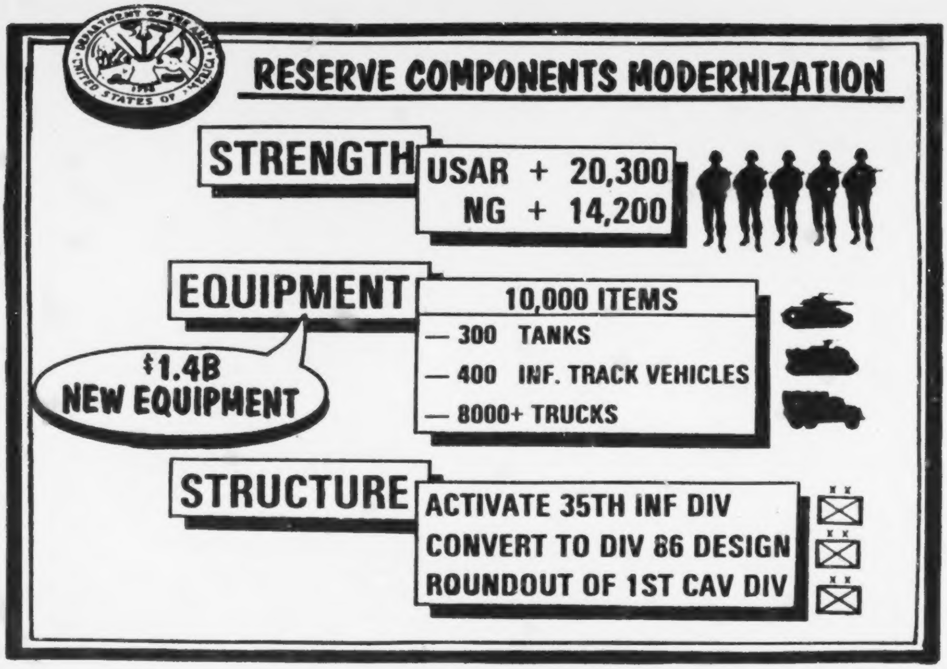
7TH INFANTRY DIVISION

To illustrate that, this is one of our existing infantry divisions, the 7th Division at Fort Ord, with about 18,000 men and women. It has 16 percent foxhole strength and a tooth-to-tail ratio of about 2 to 1. It takes almost 1,500 C–141 sorties to move it anywhere. We probably could close it somewhere in the world in about 2 weeks. That is very optimistic.

Our concept is to convert that into a 10,000-soldier division with 32 percent foxhole strength and a tooth-to-tail ratio of almost 3 to 1.

We could transport it in less than 500 sorties and it could get someplace in the world in 4 days.

Now, this kind of division is basically going to be structured along the same lines as a standard division. It will have infantry, artillery, command and control, and attack helicopters, but it will be smaller and managed better in terms of combat capability.



RESERVE COMPONENTS MODERNIZATION

STRENGTH

USAR + 20,300
NG + 14,200

EQUIPMENT

$1.4B NEW EQUIPMENT

10,000 ITEMS
— 300 TANKS
— 400 INF. TRACK VEHICLES
— 8000+ TRUCKS

STRUCTURE

ACTIVATE 35TH INF DIV
CONVERT TO DIV 86 DESIGN
ROUNDOUT OF 1ST CAV DIV

CHART 11

GUARD AND RESERVE COMPONENTS

Now, as the Secretary indicated, an adjunct to this capability, this light capability, is the increasing necessity to put resources into the Reserve components.

In the Guard and Reserve we plan in the 1985 budget to increase end strength some 34,500.

We are also planning to put more full-time manning people into the Guard and Reserve to increase the cadre level and increase readiness.

We are putting the money where our mouth is in terms of resourcing. We have in this budget $1.4 billion of equipment for the Guard and Reserve and we can identify that equipment by State, by unit, by year, to facilitate planning in terms of military construction and training. This illustrates some of the activities that will be involved in the growth of the Guard and Reserve.

As I have indicated, we are moving to strengthen the Army. As the Secretary mentioned, this is an Army on the road to excellence. We have a number of proposals before you in the budget to give some concrete dimension to that.

I am privileged to be the uniformed steward of the Army.

I look forward to questions.

Thank you.

[The prepared statement of General Wickham follows:]

PREPARED STATEMENT OF GEN. JOHN A. WICKHAM, JR.

CHIEF OF STAFF, U.S. ARMY

Mr. Chairman, members of this committee. Thank you for the opportunity to testify on the Army. In my opening statement let me provide a brief "State of the Army" report.

The Army in 1984 is a solid Army and growing stronger through modernization, improved sustaining capabilities, and increased readiness. It is the best Army I have seen in 34 years of service. We have high quality soldiers, noncommissioned officers, and officers. For example, last year almost 90 percent of our recruits were high school diploma graduates, and about 12 percent were in the lowest test category.

Recently, I decorated some of our Rangers. One badly wounded soldier, with a Purple Heart and Combat Infantryman's Badge pinned to his robe, interrupted a photographer. "Wait a minute!" he said. He reached into his pocket and took out a small American flag which had been worn on his uniform in Grenada. Placing it above the decorations he said: "Now you can take my picture, because this flag is what I'm proudest of!" With such soldiers in our ranks, shouldn't Americans of all ages be proud?

About 34 percent or $26.4 billion of our fiscal 85 budget is for military personnel, an increase of $7.7 billion over fiscal 84. Almost all of that increase, $6.7 billion, is the result of adding in retired pay accrual for the first time. In other words, all but $1 billion of significant increases in military personnel costs are the result of a change in bookkeeping procedures. That change also skews our overall budget increase, which is $15.4 billion with retired pay accrual, $9 billion without it.

The Army's modernization program also is improving readiness because our equipment is more effective across the board. For example, in Germany we have over 5 battalions of M1 tanks, which now have been on two annual REFORGER exercises. For both years the operationally ready rate was over 95 percent.

Last summer a company of our young soldiers and their new M1 tanks were the top company in the biennial NATO Tank Gunnery Competition. That's our best in 20 years. Our soldiers believe that they can fight outnumbered and win with the equipment coming into their hands. Building that kind of confidence is fundamental to our entire modernization program.

About 33 percent or $26.1 billion of our fiscal 85 budget is for research and development and procurement. This level of spending is necessary to keep pace with the threat, with technological development, and with the needs of our Army. Our equipping efforts for the Active Army and Reserve Components must continue to reduce the deficiencies of past years. Clearly, our soldiers need good equipment to be able to fight outnumbered and win.

Our modernization efforts generally are on course though some problems continue with quality assurance and design. We are working with industry to correct these problems.

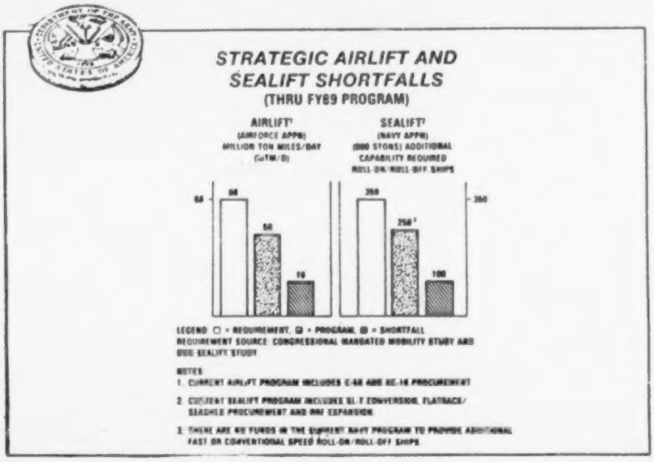
We also are moving forward on several fronts to foster cohesion throughout our Army. The history of war shows that cohesive units are tougher and survive better in combat. Leadership and management actions, regimental affiliation, and broadening of the company rotation system are working to strengthen unit cohesion and the bond among soldiers. Similarly our family action plan will ensure that the needs and welfare of family members throughout the Army receive the attention they deserve. Readiness of the Army ultimately rests on supportive, strong families.

The last third of our fiscal 85 budget is for military construction and for operation and maintenance funds. These funds maintain both our people and our equipment. They pay for, among other things, supplies, training, and troop and family housing. The O&M funds are the linchpin to Army readiness. They also allow local commanders some flexibility to make sound judgments on how best to apply them to local problems, particularly as they affect the quality of life of our soldiers and families.

All of us recognize that the world is far more dangerous than in recent years. International terrorism and threats to peace jeopardize our interests on a global scale. That's why 43 percent of the Army is deployed overseas keeping the peace in Europe and in Korea. Our commitments also include an infantry battalion with the peacekeeping mission in the Sinai, over 150 mobile training teams in 31 countries, and extensive joint training exercises like those in Honduras and Egypt.

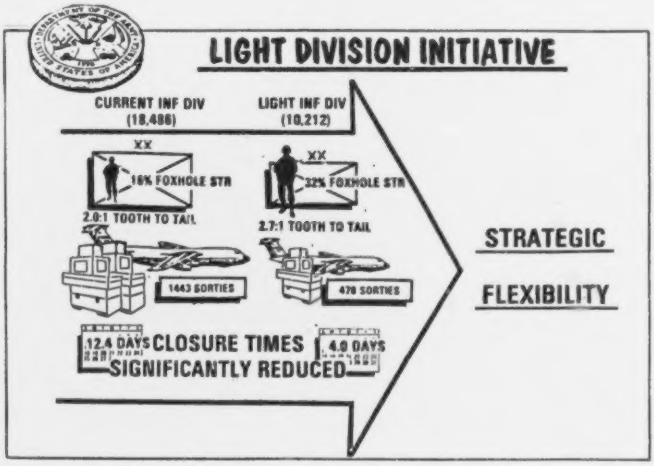
Despite the fact that the Active Army is the smallest in 33 years, we are able to fulfill these commitments because we concentrate on readiness, on improving our Reserve Components, and on quality of people as well as equipment. We also try to wring the most out of every defense dollar by reducing inefficiencies, tightening procurement practices, and capitalizing on technology.

One of the constraints in fulfilling our commitments is the continuing problem of strategic deployability, as this chart shows:



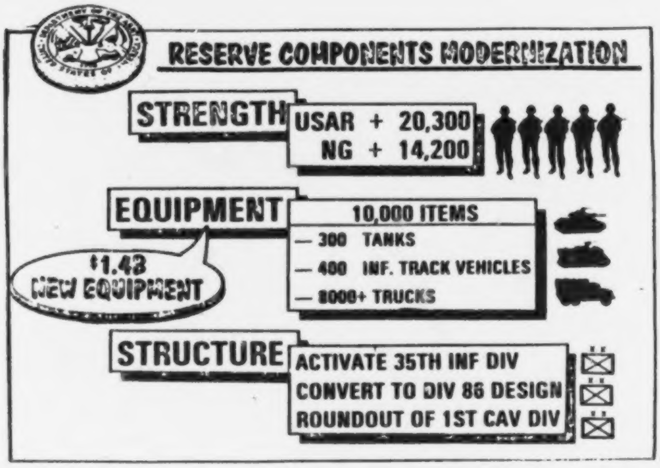
While the Navy and Air Force have programs to solve the problem, a shortfall remains. Two years ago we began an initiative to use technology to make an Army division which would be lighter than our armored and mechanized divisions, yet similar in anti-armor lethality.

This effort at Fort Lewis will continue as our test bed for doctrine and new technology. However, we still need a division which is significantly lighter than any division we now have. Accordingly, our division at Fort Ord will be reorganized into an elite infantry division of about 10,000 soldiers. It will be deployable in about one-third the strategic lift sorties required for other divisions yet will have greater foxhole strength than our current, much larger infantry division. This chart illustrates the point:


LIGHT DIVISION INITIATIVE
CURRENT INF DIV
(18,486)
LIGHT INF DIV
(10,212)
XX
16% FOXHOLE STR
XX
32% FOXHOLE STR
2.0:1 TOOTH TO TAIL
2.7:1 TOOTH TO TAIL
1443 SORTIES
470 SORTIES
12.4 DAYS
CLOSURE TIMES
SIGNIFICANTLY REDUCED
4.0 DAYS
STRATEGIC
FLEXIBILITY

We will use this same light division model for a new division we plan to activate in early fiscal 85. Creating this additional combat capability within available resources will take several years. We are already capitalizing on technology and efficiencies to reduce support structure throughout the Army. We plan to hold Active Army end strength at 780,800.

In view of the Active Army's size, improving the readiness of National Guard and Reserve units must be a top priority. For example, in fiscal 84 we are issuing over $900 million of new equipment to the Guard and Reserve. This chart illustrates how the fiscal 85 budget accelerates both readiness and modernization initiatives for our Reserve Components:



RESERVE COMPONENTS MODERNIZATION

STRENGTH
USAR + 20,300
NG + 14,200

EQUIPMENT
$1.4B NEW EQUIPMENT
10,000 ITEMS
— 300 TANKS
— 400 INF. TRACK VEHICLES
— 8000+ TRUCKS

STRUCTURE
ACTIVATE 35TH INF DIV
CONVERT TO DIV 86 DESIGN
ROUNDOUT OF 1ST CAV DIV

I've described an Army on the road to excellence, one which is improving in quality and becoming more deployable, as well as more capable in terms of combat readiness and strength. We must also be a powerful Army. We achieve that power not by matching the Soviets' 191 divisions or 50,000 tanks, but by capitalizing on American economic, political, technological and cultural strengths.

Our soldiers understand this fact of life from tough training and first-hand experience. In the Sinai they see that, because they are professionals, they can help bring peace to an area where wars have raged for centuries. Our advisors and mobile training teams all over the world see the nation building effects of American military presence. Our soldiers in Germany and Korea are warmly regarded by peoples who have known peace for decades.

To be sure, part of our power comes from our many allies and friends. But we also man freedom's frontiers and have demonstrated the capacity and the will to reinforce our deployed forces and our allies with significant land forces. These are supported in turn by a strong nuclear deterrent. We need all of these elements and the support of the American people to keep our great Army powerful. We also must continue to provide the resources which keep our small Army credible in the eyes of our enemies, our allies, and our citizens who proudly choose to wear the uniform. Thank you.

RESERVE COMPONENT FORCES CONTRIBUTION

Senator **Stevens**. General, put that chart that Secretary Marsh had concerning the Reserve strength back up there, would you please?

I think we ought to emphasize that for my good friend from Mississippi. He has been the leader in terms of our insistence upon increasing readiness of the Reserve and Guard.

Senator Stennis, that chart will please you.

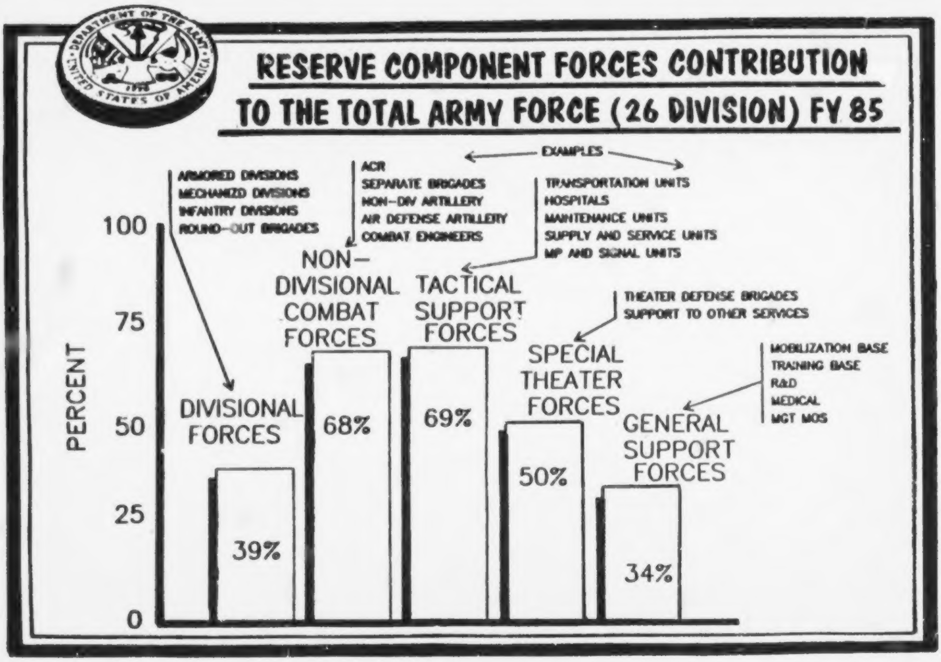


Chart 5

RELIANCE ON RESERVE COMPONENTS

General **Wickham**. This chart, Senator Stennis, that the Secretary used, reflects the tremendous reliance that we have historically and still have and must have on the Reserve components and why we need to strengthen them with equipment, with increased full-time manning and with increased participation in exercises.

During my 3 years in Korea, I noticed a steady increase in the number of Guard and U.S. Army Reserve people and units that participated in combined exercises there and noted a steady increase in the readiness and capability of them.

The Koreans were very impressed by that dimension of our surge capability. This just illustrates the dimension across functional types of forces.

Senator **Stevens**. Thank you very much.

Senator **Stennis**. I am very proud, Mr. Chairman.

One thing that attracted me to this matter was the amount of talent that goes into these units, the enormous amount of talent that you find in the Reserve. Their communities take the responsibility.

Another thing is that I think are going to have to delegate to them more and more responsibility for assignments and duties. We are out of money to pay the regulars. There is no real activity to try to replenish the treasury and balancing the budget. We are running at a deficit.

I know something has to be done about it was as a whole. I think if we utilize that talent that is in the Reserve, we can save money without sacrificing quality.

Senator **Stevens**. Do you have any questions, Senator?

Senator **Stennis**. Not at this time, Mr. Chairman.

I want to thank you for what you are doing.

Senator **Stevens**. Thank you.

Senator Rudman, do you have any questions?

Senator **Rudman**. I have a number of questions, Mr. Chairman, but I am happy to await my turn if the chairman wishes to proceed.

Senator **Stevens**. I am going to save mine.

Senator **Rudman**. I am not quite sure whether that is ominous or encouraging. [Laughter.]

LIGHT INFANTRY DIVISION

Secretary Marsh and General Wickham, I am delighted to have you here this morning.

I would like to comment on your presentation. I think it is precisely the presentation that many of us want to hear, particularly in light of your emphasis on making do with what you have and making it better.

I think we all understand the reality facing us in terms of expanding force structure, but anybody who has spent much time looking at the Army in the last 10 years recognizes that its modernization program is vitally important.

I am particularly interested in your concept of the light division, which General Wickham and I discussed some time ago. If I understand that concept correctly and I wonder if you will elaborate on it, because I think it is one of the key points in your submission, you are saying two things: first, in terms of lift you are going to need less, and second, in terms of the kinds of threats that you are facing, given the historical appraisal of the war in Europe, and all of the kinds of strategy decisions that result from that kind of scenario, these threats are only one small part of what the Army may face.

The fact is that the very kind of units you have in Europe would be uniquely unsuited, in many cases, to fight the kinds of brush fires you may have in other places.

I would like you to elaborate on that in addition to the light divisions and obvious cost differential, from the perspective of what we see developing in Grenada, Central America, and other parts of the world. We don't know what you might be asked to do.

You might comment on what the light division can do that the heavy cannot.

LIGHT FORCE DEVELOPMENT

Secretary **Marsh**. Senator, could I interpose a comment before General Wickham answers?

There has been movement in the Army for some time toward the development of light forces. I will say to you that General Wickham is the architect of this small 10,000 member light division, which is quite innovative.

As he has observed, holding the Army to 780,800 is forcing certain internal disciplines within the force to come up with new ways of doing things.

The light division is such an event and I wanted you to have that background before he responded.

Senator **Rudman**. Thank you.

General **Wickham**. As you pointed out, Senator Rudman, in the strategic world in which we live we have to be able to respond to multiple threats. We have the NATO commitment with our 10 heavy divisions. No change there.

We have to have that kind of sophisticated heaviness to deal with the Warsaw Pact.

The 10,000-man division can go anywhere basically and get there at the inception of a crisis, then, either by presence to deter or at least by its powerful capability; influence events early.

It can go to Northeast Asia and to Southwest Asia, to the Western Hemisphere, even into NATO and it can fight because it has the capability to do that.

One of the imaginative ways we are going to be able to compensate for what weaknesses it might have, such as in NATO, if it needs more antitank capability, is through the use of corps plug units such as antitank battalions and medium artillery battalions or truck battalions which the Guard and Reserve can readily recruit and mobilize from the civilian economy. Those kinds of plugs could augment the division if necessary.

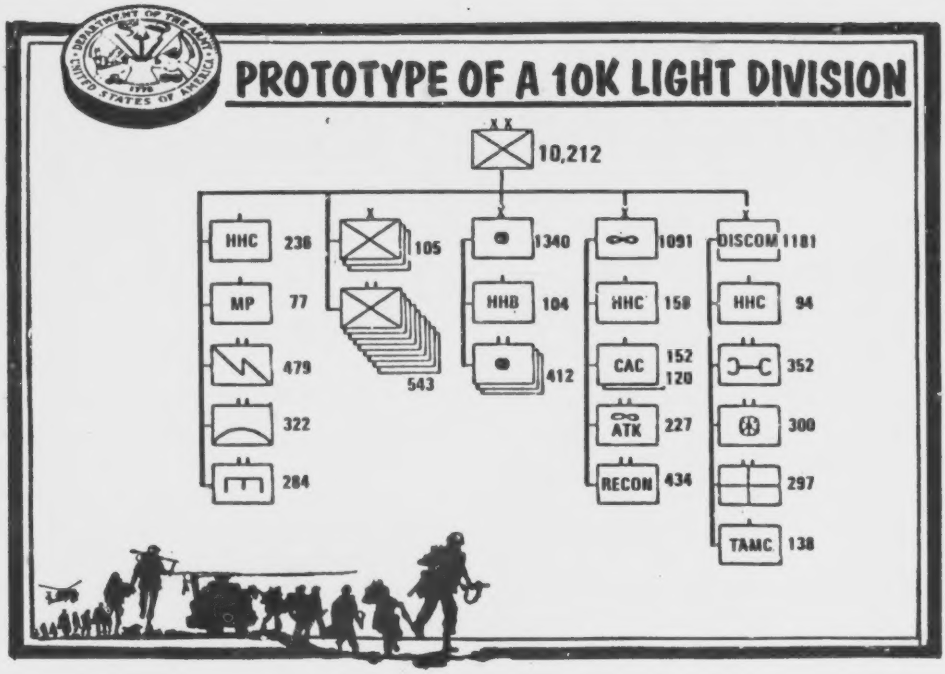

PROTOTYPE OF A 10K LIGHT DIVISION
DEPARTMENT OF THE ARMY UNITED STATES OF AMERICA
10,212
HHC 236
MP 77
479
322
284
105
543
1340
HHB 104
412
1091
HHC 158
CAC 152 120
ATK 227
RECON 434
DISCOM 1181
HHC 94
352
300
297
TAMC 138

Chart 12

LIGHT DIVISIONS

This is basically a wiring diagram, but it does illustrate the similarity of the light division to other divisions.

Incidentally, the Soviets have an 11,000-man division. The light infantry division has nine infantry battalions and three brigades. It has a very light and innovative headquarters structure, a small staff. It has division artillery with three battalions of 105's.

It has an AirCav combat brigade that has attack helicopters and two lift units that can lift one battalion of infantry in one sortie, and, by cycling it, can move around the battlefield quickly.

This is the way I maneuvered the 101st Air Assault Division in REFORGER in 1976. That is inherent in the way we use lift helicopters. The new division will have an innovative reconnaissance battalion where we pool all the intelligence collection resources as well as cavalry resources in one unit.

It also has a support structure, here, which is rather unique. We are capitalizing on technology to eliminate a lot of support people that we need in other units. It also has an HMMWV battalion for ground mobility. So, there is a potency here to this force. I think the magic of it is that it has a high tooth-to-tail ratio.

CHINESE CROSSING OF YALU RIVER IN KOREA

Senator Rudman. As a matter of fact, history will probably tell us, harking back to 1951 when all of the U.S. intelligence concerning the number of troops that the Chinese moved across the Yalu

River failed, they moved enormous numbers of troops. They were essentially light divisions.

They moved support elements. They had artillery that was indigenous to the units, but it was light artillery. They used enormous forces in terms of people on the ground. They used 10,000-man light divisions, am I not correct?

General **Wickham**. Yes, sir.

One thing I neglected to mention to the committee is that in developing this light division at Fort Ord and the economies that we will generate by moving to a couple of these light divisions as well as efficiencies throughout the force, throughout the Army, we will be able to activate a 17th active division late this year.

Basically, I am providing more bite for the buck in the Army, getting 17 divisions out of 16.

Senator **Rudman**. I believe your previous chart showed a combat-to-support ratio of about 2.7.

General **Wickham**. To 1.

Senator **Rudman**. As opposed to 2 to 1?

General **Wickham**. Yes.

Senator **Rudman**. That is an enormous increase in people who are supported.

DIVISION AIR DEFENSE

Tying this in with our whole discussion, and I don't intend to get into a prolonged discussion today, last year we had a rather splendid talk about DIVAD.

One of the things that we talked about was at a cost of $3 or $4 billion we were going to end up with 665 of those Sergeant York units. I don't question whether they work well or not. We will assume they do.

BRADLEY FIGHTING VEHICLE

There was some discussion at that time. We asked the Army in our language last year to take a look at some other possibilities. Particularly some of us were interested in giving the Army more of the capability by maybe looking at the Bradley we were going to buy a lot of and putting something on the Bradley that would give all the divisions some of the capability.

Is the Army looking at that?

General **Wickham**. Yes, sir. You and I have talked about that. We are looking actively at some of our Bradleys using the Bushmaster which does have the elevation and does have an iron sight for optical leading to use against helicopters, and we are looking at the possibility of small lead angle computers that can be used to help in terms of optical tracing.

Senator **Rudman**. Mr. Chairman, one thing we discussed last year was that the Army, particularly if it were to be deployed to a number of places at once, might not have enough of these DIVAD units, whereas the Bradleys with that Bushmaster equipment, could be a very valuable asset to the Army.

I hope you continue to pursue that because I think, talking about getting more bang for the buck, everybody who has studied the Army's air defenses recognizes that you are absolutely correct.

General Meyer was correct—the Army does not have sufficient air defense, and we need to proliferate it.

This will be a way of doing it. I hope you will come back to the committee sometime during the year with a proposal. I think that would be a worthy investment.

I may have some other questions, Mr. Chairman, but I think I will stop now.

Senator **STEVENS**. Senator Stennis, do you have any questions at this time?

Senator **STENNIS**. Not at this time.

Senator **STEVENS**. Senator Andrews.

LIGHT INFANTRY DIVISION

Senator **ANDREWS**. I have a couple questions.

Gentlemen, this light division concept. We now have 16 divisions in the Army, as I understand it.

You said you have to keep the heavy divisions in Europe because of the positions they have against the Warsaw Pact forces.

How many divisions would you say you are thinking of switching over to the light division concept?

Are you going to do it on the one or are you going to pick up two or three others?

General **WICKHAM**. You are right on target. We have 16 active divisions. Ten of them basically are oriented toward NATO. Ten divisions in 10 days is the commitment we made to NATO.

That leaves six divisions that basically are in the lighter configuration. One of them, in Korea, is rather unique. We are going to leave it in that structure. It is a hybrid type division.

In at least five we could look to some sort of commonality—the 82d Airborne Division, the 101st Air Assault Division, the 7th Division at Fort Ord, the 9th at Fort Lewis, and the 25th in Hawaii.

We are going to convert the one at Ord, the 7th Division, to the 10,000-man division this year.

We will activate the 17th division later this year. It will take 2 years to develop it basically because of the time it takes to capture the spaces.

We may go to the 25th. We may use some of the commonality in terms of infantry battalions in some of the others.

I guess the short answer to your question is we are probably looking only to three divisions, the 7th, the 25th, and this 17th.

M-1 TANKS IN POMCUS

Senator **ANDREWS**. On the subject of troops in Europe and out of 16 divisions, Mr. Chairman, we seem to have 10 dedicated to NATO, two-thirds that the Chief of the Army has dedicated to our NATO commitment.

When we were in Europe some time ago, we went into the warehouse that you have. We were told we were beginning to put M-1 tanks into the warehouses.

How many of those do you now have in those warehouses?

General **WICKHAM**. Senator, that is a classified figure, but I can put it in the record.

[The information follows:]

TANKS IN EUROPE

The term warehoused tanks as used refers to M1 tanks placed in storage for POMCUS units as opposed to M1 tanks in active units. There are [deleted] in POMCUS storage. I believe you're familiar with the rationale. Units in the United States which train with the M1 and are scheduled to deploy to NATO should draw from POMCUS the same type tank with which they have trained. This contributes to a higher state of combat readiness.

M–60 TANKS

Senator **ANDREWS**. You still have a number of M–60 tanks in the hands of the active fighting groups that are deployed in the field. Militarily that bothers me.

I always learned you put your best weapons in the hands of the people who are there on site ready to go. We are paying a whale of a lot of money to have those troops there. It makes no sense to have what you have said in earlier testimony not nearly as effective a fighting machine.

Why not deploy all M–1's until those troops in the field have all M–1's before you begin warehousing them?

I know the answer, "Well, we have troops in the United States that are training on the M–1. When they go over, they have to have M–1's there because that is the one they were trained in."

General **WICKHAM**. You stole the answer I was going to give you.

Senator **ANDREWS**. I tried to do it and leave you a narrow nitch you could move down. This is something that bothers me and the Chairman.

When we mentioned it to General Rogers, he said, no way are they going to put M–1's in warehouses.

A day later he said, "Senator, we found out they are putting them in warehouses."

So, I think it bothers him.

General **WICKHAM**. I agree. It bothers us that we cannot put the finest equipment in the hands of the soldiers that are going to be using it rather than in dead storage. Dead storage probably is an inaccurate phrase. You belittle the point about training on M–1's and then falling in on M–60's out of POMCUS.

Senator **ANDREWS**. I don't belittle it. I just say that troops that are in the field ought to be training on M–1's. The M–1's ought to be deployed with the troops that are ready to move out.

General **WICKHAM**. The 2d Armored Division and 1st Cav Division at Fort Hood, for example, that are getting M–1's and Bradleys cannot move to NATO in 10 days. We don't have enough air and sealift to do it. So, they have to fall in on POMCUS equipment. If they trained on Bradleys and M–1's and left them there and then fell in on M–60's and M–113's, they would not be as capable.

I think there is not only a training factor, but there is also the presentation of a capability that the Soviets would see. Whatever we put in POMCUS is going to be fighting.

Senator **ANDREWS**. Unless someone gets to it in the 1 or 2 days it takes us to move our troops over.

General **WICKHAM**. We hope that the political decision is timely.

WARRANTIES

Senator **Andrews**. Speaking of the M-1 tank, I understand that Avco Lycoming's latest M-1 tank-engine-delivery contract is significantly different from previous contracts. This one contains a warranty.

Mr. Secretary, can you tell me if this warranty has increased the M-1 tank engine dependability?

Secretary **Marsh**. I think it is probably too early to tell, Senator.

As you pointed out, there is a warranty from Avco. We will have to see whether or not that is going to lead to a sustained increase in performance by them. We are hopeful that it will.

Senator **Andrews**. In other words, in your experience not only in this aspect, but in the Defense Department before under President Ford, do you think this concept of moving to warranties will give you benefits and better operating equipment?

General **Wickham**. Yes; as you know, Senator, the idea of warranties has great application, particularly in commercial-type vehicles.

Many of our engineer construction vehicles carry with them a warranty. We are buying the commercial utility and cargo vehicle [CUCV], some 50,000 or 60,000 of them from General Motors. They carry a 12-month/12,000-mile warranty.

Senator **Andrews**. Now your tank engine has a warranty and your tank transmissions made by Allison, which is not too dissimilar from what I have in my farm tractor which has one-third of the horsepower, that Allison transmission can use well the guarantee in the Chevrolet automobile.

Now you are getting warranties on those transmissions?

General **Wickham**. We are actively examining the possibility of warranties in all new contractual arrangements.

As you understand better than I, a commercial warranty is easy to work out with the manufacturer because he has a track record of breakdowns and he can relate that to cost factors.

With military equipment that has no track record of performance, it is a little more difficult to figure out warranties—a tank engine, a helicopter engine, or a weapon. So, we have to negotiate to determine if it makes sense.

Also, warranties for equipment that is deployed overseas are hard to service, there are no dealers. We are looking at it and are very interested in it across the board, but I think we have to be open eyed.

HELICOPTER ENGINE WARRANTIES

Senator **Andrews**. You mentioned helicopters. Every helicopter sold on the civilian side has a warranty on its helicopter engine and I assume the engines are roughly similar?

General **Wickham**. Not necessarily. The engine we are putting in the HMMWV is the same basic engine as in the CUCV, a 6.2 litre engine. However, it is a reengineered engine to produce more power. It is different.

Senator **Andrews**. I remember a couple years ago we had a gestation period that came out of this subcommittee for the concept of jet-engine warranties.

I called a friend of mine in the airline business in the Northwest. He said: "Sure, 5,000 hours."

I said: "What about the new one that has not been debugged? If Pratt & Whitney or GE comes out with a new engine, would they give you a warranty on that when we have no experience with it?"

He said: "Darn right. My board of directors would shoot me if I didn't get a warranty on a new-type engine."

He went on to say: "If they are proud enough of that engine to tell us it is good and is going to work, they had better put their money where their mouth is. It not only saves us money, but it gives us dependability and to that fighting man in the field dependability is the name of the game."

I appreciate what you are saying, that the warranty concept will be helpful to you.

Secretary **Marsh**. Senator, we are looking at the warranty concept and it really breaks down to what is tactical and what is commercial.

In the tactical area, we do have some additional problems. For example, the first offering that Avco made on the warranty was not adequate from the standpoint of what we would warrant. I know that that was an area of our concern.

You are seeing new thinking about this in the Department of Defense and, indeed, in the Department of the Army. For example, the commercial vehicles that we are buying by the tens of thousands will have warranties.

In purchasing some of the heavy tactical equipment we watch for what the additional costs might be in order to have that warranty.

ADDITIONAL CHARGES FOR WARRANTIES

Senator **Andrews**. This gets me into an interesting question that I can't avoid.

You say the additional cost of the warranty. Let us say that they have a weapon they will sell you for $10 million without a warranty.

Do they come to you and say it will cost you $11 million for the same weapon with a warranty?

Is that in essence what you just told me?

Secretary **Marsh**. Yes.

Senator **Andrews**. Wouldn't you rather own the $11 million weapon that the guy who manufactures it feels competent it will work than the $10 million weapon that he is not so sure it will work?

General **Wickham**. If the weapon is deployed in Korea and no dealers are there, we would have to ship the parts.

Senator **Andrews**. I am not worried about that in combat or anything else.

If you move the weapon out there, nobody is going to warranty against somebody shooting at it. They will have to figure some way to fix it out in the field.

I am thinking of the basic concept and I think by the smile on your face you have the same thought that it is not good business to buy a $10 million weapon that the guy says may not work if you can buy an $11 million weapon that he says will work. That is the name of the game.

General **Wickham**. That is right. I am for putting more heat on the manufacturers.

CAMOUFLAGE SCREENING

Senator **Andrews**. I have a couple of questions, Mr. Secretary, that I will ask and extend it for the record. It has to do with our camouflage screening and support-equipment contract.

I understand that the Army's immediate need was mentioned for 500,000 units. The contracts awarded to date total 300,000 units. This leaves 200,000 units to be awarded.

When will those additional units be competed and how will they be competed?

You can answer that for the record.

This is a unique operation. As the chairman on the Select Committee, I have a good deal of interest in how we can get our native Americans in the work force. They are doing a good job supplying this camouflage and screening support equipment units.

This is a great way to get the native Americans off the welfare rolls and onto the payrolls.

Senator **Stevens**. Senator Stennis.

Senator **Stennis**. Mr. Chairman, I am impressed here with the showing these gentlemen are making. They know the subject matter exceptionally well. I am mighty well pleased.

M–1 TANKS

I go back to the tank. You are saying, gentlemen, that you are satisfied with this new tank and it will do the job we have cut out for it and you have no more worries about it as far as performance is concerned; is that right?

Secretary **Marsh**. Senator, I am sure General Wickham can add to what I say.

In the REFORGER exercise just completed in Europe—one of the largest exercises performed anywhere in the world—the M–1 tank was used extensively along with the M–60.

The M–1's availability factor was 98 percent the entire exercise. In the preceding year it was 97 percent. That year only 11 tanks went down for engine problems and none of the tanks were out for more than 24 hours.

We are seeing the enormous capability of this tank in these exercises. It is rewriting the concept of land warfare with its ability to move at night and in all kinds of weather and reduced visibility.

The tankers also insisted that we conduct a series of durability tests. They wanted to determine whether or not the tank could run for 4,000 miles with a 50-percent chance of failure.

Those tests produced the following results. They drove seven tanks 28,000 miles and the rate came out better than the test criteria.

General **Wickham**. The engine durability and drive train tests that the Secretary mentioned have come out far better than we expected. We still have some problems with the track life. We are trying to get the track life up to about 2,000 miles. We are at less than 1,000 now. The state of the art apparently is not ready to give us that kind of capability. But that is a solvable problem.

As you know, Senator Stennis, there are some modifications that will be proposed for the M-1 tank in the future. The M-1E1 would have a chemical defensive capability and the possibility of a larger gun, the 120-millimeter smoothbore gun.

We have not decided in the Department to make all those changes.

The tank is a solid piece of equipment. Everyone who has been associated with it is very impressed, including, I am sure, those who might have to face it.

Secretary **Marsh**. We are putting two battalions of them in the Mississippi National Guard.

Senator **Stennis**. That is fine.

LENGTH OF TIME FOR MAIN BATTLE TANK DEVELOPMENT

Why did it take so long to bring this weapon on to its present stage? It creates doubt about our ability to bring the thing to a conclusion, get it to working the way you want it to work.

Do you have some comments to make on that? I am talking about the years past. It has been 20 years, I think, since we started the process to produce the present tank.

General **Wickham**. The main battle tank has been 20 years in development. You are right on target Senator Stennis. I think it is a reflection of the uncertainty as well as trying to work out a joint program with other countries.

The rapid pace of technology also complicates development. Selecting the point in time at which we freeze technology and begin production is an art.

I think tank warfare is one of the areas where technology is moving very rapidly and that is a factor in the delay in developing the M-1 tank. I also think there is enough egg to go around.

Senator **Stennis**. Mr. Chairman, we are going to have again this question about production and the number that we are going to put in the military this year. We had it up last year.

Senator **Stevens**. I intend to get into that, Senator.

Senator **Stennis**. If you want to go into it, I yield to you.

Senator **Stevens**. No, be my guest.

Senator **Stennis**. I am interested in the subject, but you have worked on it more than I have. I yield to you on that subject right now, if you wish.

Senator **Stevens**. I do congratulate you, Mr. Secretary and gentlemen, and want you to know as far as I am concerned, this subcommittee and committee are going to try to do the best we can to get the Army the money it needs to maintain the initiatives that you have outlined and maintain the progress that you have made in the past.

BUDGET PRIORITIES

However, we know what is happening in the budget process. I remember a distinguished member of the Budget Committee here—I am not going to put him on the line—saying what the Budget Committee is going to do, but clearly if we get a budget that is going to put a problem in our hands, as a matter of fact, the baton will be burning on the handle, not on the end.

We have to go through some of these things to see where, if we are given the duty of making substantial cuts in the overall defense budget, we might place those cuts without harming the progress you have made.

I want to tell you that we are with you along the line if that happens. I tell you I expect it to happen.

ITEM INCREASES IN FISCAL YEAR 1985

That leaves the question of the M-1 that the Senator mentioned. Last year the Congress went up to 840 as far as production.

The administration has again requested 720, but the production line is producing 840, is it not?

General **WICKHAM**. That is right.

Secretary **MARSH**. We are beginning to produce 840.

Senator **STEVENS**. In this fiscal year it goes up to 840?

Secretary **MARSH**. That is right.

Senator **STEVENS**. That is not the only one of the items in that area that has increased substantially. We have had a considerable amount of increase——

Secretary **MARSH**. We are asking for 720.

Senator **STEVENS**. I understand you are asking for 720 there, but they are already up to 840.

If I read the Congress, we are going to be forced to face the question of whether we maintain that rate of production as compared to the cost of coming back down.

Are you prepared to tell us what the cost is of going up to 840 and then coming back to 720?

Secretary **MARSH**. I believe the saving is $53,000 a tank.

Senator **STEVENS**. That savings per tank going up in production is $53,000 per tank?

Secretary **MARSH**. The larger production figure saves you $53,000 per tank.

Senator **STEVENS**. Over the whole 840 or 720?

General **WICKHAM**. For the whole.

Senator **STEVENS**. What does it cost to go back down to 720?

As I understand it, it will cost to reduce the production line, termination payments. The whole concept of coming down is expensive they told me last year.

Have you quantified that?

General **WICKHAM**. We will have to put in the record the exact amount.

Senator **STEVENS**. you have asked to come down to 720?

General **WICKHAM**. Right.

Senator **STEVENS**. You must have calculated that.

Can you give it to us for the record?

General **WICKHAM**. We will give it to you for the record; $53,000 per tank is sort of a ball park estimate.

[The information follows:]

Cost Savings on M-1 Tank

Based on past experience, our analysts calculate a net effect of $53,000 per tank, for a fiscal year 1985 impact of $44.5 million. The cost penalty is primarily in the increased overhead applied to each tank. There are certain fixed costs at the tank plant which cannot be reduced as tank production rate is reduced; consequently, each tank costs more at a lower production rate.

PRIORITIES IN ITEM PRODUCTION INCREASES

Senator **Stevens**. I wonder if we could prioritize that tank as compared to other things?

I note, for instance, the Patriot will go up from a production quantity of 440 to 585, the Bradley fighting vehicle from 600 to 710. We have the armored machinegun from 2,250 to 4,756. We are taking the smoke grenade launcher from 3,371 to 5,526. The tank level sight device from 750 to 2,350 and taking the attack helicopter from 112 to 144.

Those are substantial increases in production lines that are not ramped up yet.

We would like to have some understanding of the priorities as far as those increased productions because if we do anything here to prevent an overall reduction in the existing program elsewhere, I would assume that we have a substantial cut to apply, will have to apply first to the areas of increased production rate unless you tell us that the priorities are higher in such areas than they might be in others.

Secretary **Marsh**. Senator, you have touched on it there. The consideration for the 720 figure was based on a general affordability problem with the Army's budget in its entirety.

The needs in the other areas had to be addressed. As a result, that figure was the one that had to be presented.

Our budget, as you know, is 25 percent of the total defense budget, yet we are the largest of the services. The apportionment of funds resulted in 720 tanks. Then we had to address other areas where we thought there was a more critical need.

It was an affordability question.

PRIORITIES ON BUDGET CUTS

Senator **Stevens**. Normally, if we were told by the Budget Committee, and just let us take a figure, to apply a $10 billion cut to defense, we would look at your 25 percent and we would say not more than 25 percent of that will be applied to the Army.

As a matter of fact, since you have the lowest amount, we would probably say we should not even come close to that because you have already been cut obviously as compared to the other services.

But we have to figure this out in terms of where those cuts go.

The Senator's question is, now we are up to 840 and the people are employed in that production line and savings are set at $53,000 per unit, why should we decrease that production rate and increase other production rates, the Apache helicopter, Bradley fighting vehicle, machine guns, the launchers, the small missiles at an extra cost?

Again, we have to get your priorities. You must have some military priorities in there.

I am not asking you to give us those priorities right now, but we want you to start helping us think along those lines, where the cuts can go.

We should not tell you where the cuts go. You should prioritize them for us.

Is the $53,000 per tank saving sufficiently important enough in the overall picture of acquiring tanks as rapidly as possible to reduce the requested rate of increase in production of other weapon systems?

General **Wickham**. Mr. Chairman, let me try to give a brief answer to that.

It may not appear so, but we tried to develop a coherence and balance in the budget. When we go to argue before the Defense Resources Board we have developed a balance within several thresholds as the Secretary indicated.

Where the line is drawn at that threshold——

Senator **Stevens**. When you went to the Resources Board, you must have won. We need that fallback line.

What would you give up at the first level?

That is our problem. We know it is going to be cut. We are not asking you to defend what you won before the Resources Board.

We are asking you to help us prioritize what you might lose.

General **Wickham**. 720 tanks was well protected. The 840, the additional 120, was above the line.

We are talking roughly of $250 to $300 million for those extra 120 tanks. So, we have to give up something. Going to the larger number of Apaches moves us into an economical production rate.

3-YEAR CYCLES ON TANK PRODUCTION

Senator **Stevens**. We look at 3-year cycles. If you are telling me on 840 tanks we will save $53,000 a year for 3 years' production as compared to coming down to 720 and losing that, are we better off to put our money in that and looking at ramping other production more slowly in terms of items with less priority?

I take it the M-1 has high priority. I disapproved going to 840 last year because of increased cost. Now the costs will come down and we are losing the advantage of quantity purchases.

We would like you to start thinking the way we have to think now in terms of priority.

If you have to come back down, what are the most important things and where are the areas where you want to tell us not to come down?

We would like to visit with you about that.

Senator **Stennis**. Mr. Chairman, if I may just make this observation.

The bill is not exclusively in our charge, but the two of us are there on the floor and we represent the committee to a degree and the membership that is not on the Appropriations Committee have a right to come to us for a definite recommendation, yes or no, on this question.

We have to have something to point to that will sustain whatever we recommend. That is why we want something as definite as we can get.

We can't answer that question by just looking at the blank pages of the record. We have to have something to stand on.

Senator **Stevens**. We are not advocating that you agree to any cuts. We don't know what the magnitude of the cut will be.

If I can get the Army budget through as presented, I will. I have looked at it. I think there might be some modest changes here and there, but it is a good tight budget and obviously one that is needed.

STRATEGIC COMMITMENTS

Let me tell you, though, that I think the committee, and Senator Andrews reflects it, has some serious question about the problem, the continued problem, of having 60-plus percent of our divisions in NATO at a time when mobility is called for around the world.

We do congratulate you in terms of the light division concept. I must be parochial and invite your attention once again to Alaska and remark to you that if that division were in Alaska, it would be 4,600 miles from Germany. It would be further from Germany in the southeastern part of the United States.

Senator **Rudman**. It would be a lot closer in New Hampshire, Mr. Chairman.

Senator **Stevens**. You would be further from Southeast Asia and in Alaska it would be equadistant from Southeast Asia.

You could take a light division to Cuba in almost the same amount of time. I invite your attention to that.

I will be glad to give you the Betamax tape of the third world war movie in case you forget what happened.

Without being facetious, the POMCUS matter again bothers me in terms of the problem we face with regard to the budget restraints. I still view POMCUS as our Maginot line.

We are putting a tremendous amount of war material under warehouse roofs that are not hardened that appear on maps in Europe.

The warehouses are on a map and we are presuming the Russians, if they come, are going to let them sit there for 10 days so that when our Reserves and our Guard get there, they will roll out new M-1 tanks and new jeeps and new Bradley fighting vehicles and get in them to go out to the front that existed 10 days previously.

I really think that all of us when we went over there just couldn't comprehend that, General. I know Bernie Rogers was mad at me for having said so, but I will say as long as I am here, I think that priority is wrong as compared with the priority for having absolute readiness as far as the Guard and Reserve mobility vehicles to move them anywhere in the world.

We do not have the mobility for NATO. When we asked the NATO people here the other day if they would agree that we would be able to set up an ability to move a portion of our NATO forces to the Southeast Asia area if the need arose, they said, "We would really have to consider that."

The British moved theirs to the Falklands and Ireland. The Central European people have moved them.

We are in a position now that last year we prohibited using POMCUS five and six until the Reserve units met 70 percent, the active units, and Reserve units had 70 and 50 percent, respectively, as far as equipment needs were concerned.

You budgeted five and six this year. Does that amount to a certification that the minimum as outlined in the appropriations bill for 1984 have been met?

General WICKHAM. No, sir.

As we discussed the other day, the 10 and 10 commitment, 10 divisions in 10 days, is a time-honored commitment to NATO.

Senator STEVENS. We are committing ten divisions to them?

General WICKHAM. We cannot get them and their equipment there in 10 days. That is the rationale for the additional sets of equipment. So that we can fly divisions over there to fall in on equipment.

UNITED STATES LARGEST OCCUPIER IN GERMANY

Senator STEVENS. I know that we are the largest employer in Germany. We are now the largest land occupier in Germany. We want more land to store more equipment there to try to meet our equipment commitment.

General WICKHAM. We have four sets already in Europe. The warehouses for five and six have just been built.

Senator STEVENS. I know that. We told you that you could not fill them until you certified that the Active and Reserve met the 70 and 50 percent readiness equipment needs.

General WICKHAM. Let me refresh my memory on that, sir. I believe that the guidance was that we could only spend $5 million for maintenance of the warehouses and no money for transportation. If we started to take equipment from the United States, we could not go below 70 percent for the Active Forces and 50 percent for the Guard and U.S. Army Reserve.

We still can move in that direction. There is equipment that is available in the United States to put into POMCUS five and six. That is why we are asking for transportation money in the 1985 budget to move equipment into five and six.

If it is the will of the Congress that we will not be allowed to do that, then I think that reflects on the diplomatic commitment of the United States to NATO.

Senator STEVENS. The Secretary has just shown us the areas where there are already crises in the world and the areas which are in foment and are likely to become crisis areas in the next years.

If you look at that, none of them is in Europe, none of them is near NATO. Yet we want to continue to put more than 60 percent of our Army assets in NATO.

I think the Congress has seriously questioned it. I think you will find more questioning as we are forced into this.

One of the people on the Budget Committee told me yesterday that he felt we ought to count on a $40 billion actual cut in the defense budget. This is an $8 billion actual increase from 1984 to 1985 with no real growth. We are minus real growth if that comes out.

I have an idea that that budget is not going to get across the flooor of the Senate as long as John Stennis and I are alive, but they might try. That is a tremendous, tremendous cut in this modernization program.

We might have to start thinking about numbers of that kind.

POMCUS has to be one of the things that goes first as far as we are concerned.

Secretary **Marsh**. I know the committee is going to do what they view is in the best interest of the Army and the country, but I will say to you that the present NATO environment is a great tribute to American foreign policy and defense policy.

That NATO alliance—with all its weaknesses—has kept the peace in Western Europe for a period longer than any time in western history. That era of stability that we have experienced there attests to the investment that we have made in this area of the world.

If it unravels there, it is going to unravel in a way that may involve us in an enormous problem.

Senator **Stevens**. You could be right and I may have been misunderstood in what I am saying.

The question is priority for increases in spending. I have not said to hold up the existing POMCUS warehouses. We have not said bring home one of the divisions.

We have said in the past don't send any more over. We have said watch your expenses such that you can help beef up our mobility in the rest of the world.

Senator **Rudman**. My only comment, Mr. Chairman, is in a real sense, and I am sure the chairman will agree on this, we have the wrong witness in front of us in this discussion.

General Wickham is Chief of Staff of the Army. General Wickham implements national policy as given to him by the President and Secretary of Defense.

I think we have our priorities a little bit out of whack also. Frankly, General Wickham is told this is what you have to do as a matter of national policy. I think General Wickham has no choice except to come up here and say, "Give me what I need to go where my superiors tell me to go."

That is what he is told to do. He needs POMCUS five and six to fulfill his obligations.

I agree with you, we might put them some other place. I think we ought to get the Secretary of Defense up here and talk about the policy he is imposing on the U.S. Army.

Senator **Stevens**. This year we have decided to ask the Secretary of Defense to come last rather than first so that we might get some details before asking questions instead of asking him questions and then getting the details.

Senator **Stennis**. Let me make this comment.

SUCCESS OF NATO

I think the most successful thing we have undertaken since the end of World War II has been NATO. I am proud that I have supported it.

I remember General Eisenhower's strong testimony back before you were in politics.

I think now you have seen things happen in the last year that you gentlemen are going to have to divide up with other parts of the world. It is serious, too, the fact that we have not been able to be more effective than we have.

I am disheartened over the problem in Lebanon. Closer home, the people are interested in the Central America area. They know about it, more than you realize. That adds another problem at our doorstep.

I am glad you got as far as you did with these good tanks.

That is all I have to say, Mr. Chairman.

OPERATION AND MAINTENANCE FUNDS

Senator **Stevens**. Thank you, sir.

The committee does plan a trip to Honduras the first weekend we are back. We want to see what the plans are there for the use of funds that are under the jurisdiction of this committee, and because of allegations that have been made, we have asked the Military Construction Subcommittee to accompany us there.

We hope that we will be able after that trip to decide whether we should go into the Honduras question in any depth here.

I want to say just for my own point of view that you don't have the view that operation and maintenance funds have to be spent in the way that the purpose of the objects that they are spent on can only last 1 year.

The implication is that O&M funds should not be used on anything that has more than 1 year, those things that should be military construction projects funds, if they are not absolutely just used, literally spent for oil that is consumed or something, food that is consumed.

That is not my understanding of O&M. We want to make certain, however, that we are not going to go into long-range construction projects with O&M funds. We will talk to you about that at a later time.

M–1 ENGINE SECOND SOURCE

Can you tell us anything about the cost effectiveness and feasibility study we asked for in establishing a second production source for the M–1 tank engine?

Secretary **Marsh**. That study is due to be presented to Congress in mid-March. I am confident it will be presented at that time. I think we have to wait to see what the study shows us.

Senator **Stevens**. We anticipate there will be a substantial battle in trying to achieve agreement on a bill because of the differences between the House and Senate on that subject.

ARMY STRENGTH OVERSEAS

You do have a small increased budget for 800 personnel. That is not many, considering the size of the Army that we are maintaining now.

What portion of that manpower increase will be for forces overseas?

General WICKHAM. That is a tough question to answer, sir. Some might be. A half dozen, dozen, a very small number.

We are activating a Ranger battalion. Some of the numbers will go into there. We are basically holding our end strength in Europe to the congressional ceiling which has been allocated out to the services.

Senator STEVENS. Any of that portion contemplated to have any substantial increase in troops in NATO?

General WICKHAM. 217,000 is the Army ceiling in Europe. I would like to give you that for the record.

Whether there will be a few of them go to some of the changes in our divisions; basically the answer to your question is no.

[The information follows:]

TROOP INCREASES IN EUROPE

The Army troop strength in NATO Europe has historically been a little over 217,000. When the first Congressional ceiling was set in fiscal year 1983 it was too late in the year to reduce organizational structure to satisfy the 3,000 space cut required by the Army's share of the ceiling, so we undermanned our units. The increased fiscal year 1984 ceiling allowed the Army to restore most of that undermanning but limited our structure to about 216,700 spaces. For fiscal year 1985, we plan to restore our European structure to 217,000 and maintain that level in the future. When compared with the fiscal year 1984 troops strength there is an increase of about 380 spaces, but this is not growth; it is a return to the Army's level of 1982 and earlier.

MILITARY VERSUS CIVILIAN PAY AND INCENTIVES

Senator STEVENS. You have a 64-percent reenlistment rate. Your high school graduate level has jumped to 88 percent.

You have to remember I do chair another subcommittee on the civil service side, so I automatically make some comparisons that others might not make, but your 1985 request includes a 5.5-percent military pay increase, a $70 million increase for variable housing allowance, a $70 million increase for incentive pay, and $45 million increase for new bonus payment.

Why, in terms of the fact that you have already reached 120 percent of your reenlistment objective for next December, according to our figures, do you need so much money for incentive pay and for these increases?

Particularly why do you project a 5.5-percent military pay increase when the cost of living in the budget is less than 3 percent?

Secretary MARSH. I believe if you look at comparability as it is established by professional, administrative, technical, and clerical standards, we are still about 7 percent below comparability in military pay.

In reference to reenlistment bonuses, not every soldier who reenlists gets a bonus. These are targeted for those very select skills that the Army must have. We are investing in an enormous amount of experience and training.

The enlistment bonuses for initial recruits and the reenlistment bonuses for soldiers already serving are the secret to the success that we enjoy in recruiting and maintaining our experience levels.

We do see some warning signals appearing on the recruiting scene. The threshold traffic in the recruiting stations of all the services is down. This means we will have to work harder. And in order to meet our reenlistment and enlistment criteria, these bonuses are invaluable to us.

As for the variable housing allowance, we find lieutenant colonels in the Washington area needing the variable housing allowance that they are given because of the high cost of living in this area. When they rent homes in this area, they experience a significant shortfall.

Senator Stevens. The military on the average has had a 172.5-percent increase since 1970. The postal union, 163 percent, the private sector, 139 percent, the Federal civilians, 118 percent.

We are going to ask the Secretary about this because your particular increase is different from the others. I don't understand why you want to further exacerbate the difference between those who are in your own Department who are in uniform as compared to those who are civilians.

Secretary Marsh. In our request we would like to target some of that and allocate it toward the grades of E-5 and E-6. Our service makes a distinction between the grades because we feel there are certain key areas that need to be targeted.

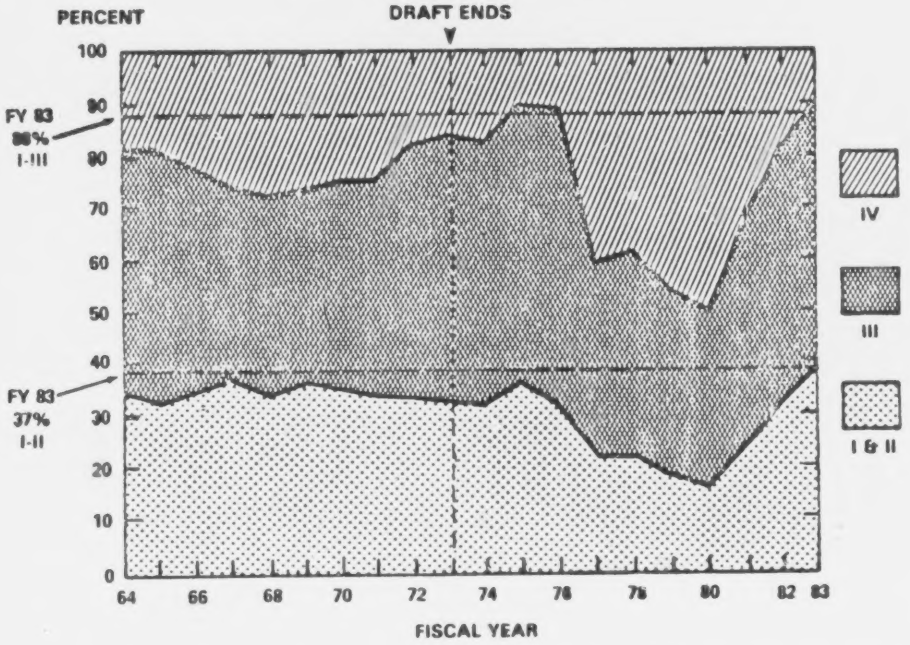
So, we will make that distinction in the military.

General Wickham. Senator, could I tag on to his comment?

Senator Stevens. Yes, sir.

General Wickham. This may be useful in terms of explaining the benefits that have come from what the Congress has helped us do with incentive pay, reenlistment bonuses, variable housing allowance, and also the downturn in the economy.

DISTRIBUTION OF ARMY NPS ACCESSIONS* BY AFQT CATEGORY FY 1964 THRU 1983



*INCLUDES NPS MALES AND FEMALES (INDUCTEES, REGULARS AND RESERVES WITH 2 OR MORE YEARS ACTIVE COMMITMENT)

Chart 13

ARMY'S TEST CATEGORY CONTENT

This chart shows over the years the test category content of the Army. This is between I and II. III is the next highest. Category IV is the lowest.

Congress has mandated we not take more than 20 percent test category IV. You see the enormous growth of test category IV, 1978 through 1980.

Congress said get with it and reduce the number of category IV. Now we are up to here. We are taking less than 12 percent test category IV in the Army.

Senator Stevens. You are making my case for me, General

General Wickham. The quality is there. The quality is related to what the Congress has helped us do with incentive pay. This is not immutable. This will not go on forever.

As the Secretary indicates, threshold traffic is changing. We need to be cautious about adjustments in incentive pay.

Senator Stevens. General, in that period where you have the "bathtub" is where there were no pay increases for the military?

General Wickham. Exactly.

Senator **Stevens**. No incentive pay. You did not even have the cost-of-living adjustment. You had no recognition of the needs of the military.

Senator Stennis fought and tried to bring it around and it did come around. You made the case, we are now at an alltime high in terms of mental content.

Why do you need further adjustments in terms of these incentives and particularly why do you project a pay increase, and I am sure you will get it in an election year, but I have to ask why when it is going to exacerbate the difference between military and civilian in your own Department?

In your own Department you will have people coming back in uniform. In that period of time we had testimony when people were converted out of uniform and into civilian and staying in the Army as civilian employees.

We see it in the Guard all the time. One time they are uniform, another time civilian, and it is because of the pay differential in the private and military. We try to keep them comparable.

In this period of time you had at least one-third more in increase in regular pay than the civilians in your own Department. Now you want the other incentives.

General, we had a hearing last year and in terms of variable-housing allowance there was only one place in the country where variable housing allowance wasn't paid on top of the basic allowance for quarters.

In this city the cost was outlandish. Those colonels are right beside a civilian who has been in the Department of Defense in the Pentagon for 20 years. He lives here. He doesn't get an allowance at all. The colonel does.

He already gets basic allowance for quarters. Now you want to increase his variable housing allowance. That I think has to give you a morale problem very soon in terms of your civilian workers in the Department of the Army.

We have to ask why do you want to do it?

General **Wickham**. The civilian stays here for 20 years and the colonel may have to go to Germany or Korea at a moment's notice. He has to buy houses in different locations. He signs an unlimited liability contract.

So, there is a distinction. Therefore, the pay has a distinction.

The reenlistment bonus change we are asking for is only about $3 million. Part of those things are to call attention——

MILITARY HOUSING ALLOWANCES

Senator **Stevens**. I would like you to give me that figure. I have heard that now for 13 or 14 years in this committee. I have been in and out of Washington since 1950. I respectfully don't believe it.

The people I have known in the military who came here right from school, as I did in 1950, bought a home and most of them still have them. They rotate in and out of here and they rent them and get their housing allowance anyway.

Tell me how many in the Army bought and sold homes in this town last year.

General **Wickham**. I will try to get that for you.

[The information follows:]

HOMES PURCHASED BY ARMY PERSONNEL IN WASHINGTON AREA

According to the latest variable housing allowance (VHA) survey, a sampling indicates there are approximately 7,000 Army home owners in the Washington, D.C., area. However, no mechanism has ever been established to collect extraordinary data such as the number of personnel who have bought or sold homes in any given year.

VARIABLE HOUSING ALLOWANCE UNFAIR

Senator **STEVENS**. We keep getting this figure, we have to have these allowances.

As a matter of fact, most of them are getting housing allowances and they have the same homes they have had for 15 years. Now, that is unfair to the whole society when they get allowances that exceed the actual cost of their homes.

This variable housing allowance is wrong for the whole society when it becomes something that is nationwide.

Another thing you can tell me. In how many areas of the country does the Army not pay a variable housing allowance?

General **WICKHAM**. Probably most of them.

Senator **STEVENS**. Respectfully, sir, when we had testimony last year there was only one. It was New Mexico. All the rest of them except Gallup, N. Mex., you were paying variable housing allowance in addition to basic allowance for quarters.

General **WICKHAM**. I have a young captain son at Fort Carson and a son-in-law, also a captain. Their variable housing allowance is less than $30 a month.

Senator **STEVENS**. They get a basic allowance for quarters?

General **WICKHAM**. The cost of the home is greater.

Senator **STEVENS**. Gentlemen, I understand the problem with your captain sons and that is the problem with all sons.

The home that my first wife and I bought when we came back to Washington in 1968 cost $65,000. I am informed it sold for over $250,000 the other day.

The new Senators have the same problem. The new Congressmen have the same problem. The new guys downtown, men and women in the executive branch, civilians, have the same problem.

The only difference is that the military sold us on the prospect of a variable housing allowance to take care of the very difficult problems for some members of the military.

When we held the hearing last year we showed that 99 percent of the military were getting some variable housing allowance, but that is not what it was for.

It was for the unique case where they had to have assistance because of the cost-of-living factor. It became a supplemental basic allowance for quarters.

As far as I am concerned, it is unfair to the civilian sector in terms of civilian Government employees who do not get such an allowance. They don't get the basic allowance.

I think we have to look into this. Very frankly, I want to have that hearing because I think we cannot continue allowances that are intended to be for spot cases of hardship on the basis that they have suddenly become accepted fact that everybody is going to get them.

BONUS PAYMENTS

The other thing is the bonus payment. We would like to have some further justification on the bonus payment.

I understand that incentive pay increase, when you have a group of expanding mental capability, the concept of the incentive pay increases for those people to upgrade themselves and to further perform is very well taken here.

But the new bonus payments with the enlistment rate we have, the reenlistment rate we have, an increase of $45 million in that——

Secretary **Marsh**. You asked about the bonus payment. We have done a number of surveys. They indicate a direct relationship exists between the civilian economy and the departure from the service of people in the higher test categories.

The category IV's will stay with you longer than the higher mental categories.

We are looking at the people in the upper ranges who have been in the Army 3 to 12 years. They may have language skills. They may have very significant skills involving repair of electrical units or tremendous ability in the field of radar.

We are trying to keep those people in the service. We will have an enormous problem if we lose them in large numbers. We will have to replace them.

I think the long-term benefits of bonuses will probably pay great dividends.

I will say to you that the Army is affected more in the area of enlistment and reenlistment than the other services. We are the bellwether.

Senator **Stevens**. Last year we gave you $86 million. We increased your level for bonus payments by $86 million.

Now, this year we have been asked to increase that again by another $25 million.

We really did increase it last year. We increased it every year.

Secretary **Marsh**. As I said to you, the successes you have seen presented in all of these line charts today are a result of your efforts to raise the capability of the force.

Senator **Stevens**. I just think that somehow or other what has already been done has to be recognized in terms of these bonuses.

PERMANENT CHANGE OF STATION POLICY

I want to congratulate you in terms of your permanent change of station trendline. It is down. It is responding.

As a matter of fact, I again remember the hearings my good friend from Mississippi held—Senator Hollings and I were there that day—respecting the period of time for rotation and how important it was to try to stretch that out in order to become more cost effective.

It is my understanding you are down to 175,000, roughly, from 189,000 rotational moves.

Are you considering longer overseas tours to reduce that even further?

General **Wickham**. Yes, sir, we are trying to get more accompanied travel, for example, in Korea so that we can reduce PCS moves.

We are sensitive to the direction the Congress has given us there. I think it also leads to greater stability, operational stability, less turbulence, and better family life.

So, there is a lot of value from your initiative, sir.

Senator **Stevens**. Senator Rudman, I am just to the questions that I have about DIVAD, but assume you have some questions in an area.

Let me yield to you at this point.

RECRUITMENT AND REENLISTMENT

Senator **Rudman**. Mr. Chairman, thank you.

I just want to ask one followup question to the chairman's line of questions.

Am I correct in saying that in the last month, you had your first slight downturn in recruitment, the first sign that maybe things were turning a bit the wrong way?

Am I correct on that, General?

General **Wickham**. Yes, sir. As the Secretary indicated, we have an indication of fewer folks coming across the threshold. That may be a reflection of the economic turn.

We are going to have to work harder in our recruiting and instructions have gone out to our recruiters so that we can keep emphasis on quality.

Senator **Stevens**. Will the Senator yield?

Senator **Rudman**. Yes.

Senator **Stevens**. The information we have is the first-term enlistments exceeded the objective by 20 percent last year, your overall objective by 3.2 percent, and that your recruitment demands are down because your reenlistment rates are up.

Isn't that so?

General **Wickham**. No, sir, we are both right there. You are talking about reenlistment.

Reenlistment is good due to the incentives the Congress has provided to us and probably also due to the marketplace.

Senator **Stevens**. The Times said you enlisted 388 more soldiers in the Army in December than you had planned, that your reenlistments exceeded the objective by 20 percent and, as I said, your midterm rates were 6.2 percent and career rates 4 percent.

It doesn't sound bad.

General **Wickham**. The objective is lower. It is lower because we are concentrating on quality reenlistments. It is harder to reenlist in the Army now than it ever was before. There are no more awards for reenlistment quantity because we are going to quality.

There are ceilings for reenlistment and if you have an article 15, forget about reenlisting.

The enlistment side remains the same. We are still asking for 148,000 enlistments. Where we are beginning to see the downturn is on the enlistment side. The threshold number is down in the Guard, in the U.S. Army Reserve, and in the active duty areas.

Senator RUDMAN. That would be directly related to the economy. I think every graph shows that.

I only make the point that all of this took place with relatively high unemployment. The unemployment figures are down to around 8 percent again. Hopefully with all of the things we have built into the system, we will be able to keep up the enlistments.

Certainly it will be more difficult with 8 percent unemployment than it was with 11 percent unemployment.

COPPERHEAD

I have just two questions that require brief answers.

I believe we are at the time, February 1, I believe, that we are supposed to get some report back from you, General Wickham, on Copperhead, both in terms of cost and testing and evaluation.

Are we about to get a report on Copperhead?

General WICKHAM. I can't tell you, sir, but we will provide the report in due course. Copperhead results continue to be very favorable. The reliability rate exceeds 80 percent. Costs will come down. I think the production problems have been solved. Copperhead is going to be a valuable addition to our capability to bring to bear lethal firepower.

Senator RUDMAN. Could you have your staff take a look at the bill again?

There were some rather specific requests we asked for. We understand you might not be right on time, but hopefully we can get it in a timely fashion.

ANTIARMOR SYSTEM

The hearing would not be complete if I did not ask you what is going on in the area of light antitank weapons.

General WICKHAM. As you know, sir, the Army canceled the Viper because it didn't do well in both cost effectiveness and performance. We probably pushed the state of the physics with that weapon.

We are looking at further testing of the Swedish AT-4 system. It is heavier and doesn't have some of the capability that we would like.

So, we are looking further at the light side of an antiarmor weapon.

I don't believe we are ever going to have a hand-held weapon with which the soldier can throw the weight that can hit the tank head on. We can kill armor from the side and maybe we can kill it from the top. So, we are looking at a lighter hand-held antiarmor weapon.

We are also looking for research and development of a medium weapon to replace the Dragon. I would like to see the Army have just two antiarmor systems, a longer range one and medium/short-range one. That would simplify procurement and still be lethal on the battlefield.

Senator RUDMAN. The Marine Corps, as I am sure you are aware, is looking closely at the Israeli weapon system licensed in this country. It is a heavier system compared to the one we are talking about.

I assume you are really looking at the whole field of antitank weaponry and deciding whether or not you are going to go for a real light weapon that will essentially be a bunker buster and light armor buster?

General **WICKHAM**. We are continuing with the LAW's. We are maintaining them in our war reserves and we are procuring some more LAW's.

STINGER

Senator **RUDMAN**. How is your Stinger research right now?

General **WICKHAM**. The Stinger, air defense hand-held weapon, replaces the Redeye. We are buying fewer basic Stingers than we had originally planned because technology is outstripping us in terms of the defenses of enemy aircraft.

So, we are buying limited numbers so that we can accelerate the procurement of the Stinger Post. There is a Stinger Post reprogrammable capability coming along that I can't talk about in this hearing.

So, we are buying the Stinger Post which is more compatible with the threat. The threat is jinking aircraft that are kicking out flares.

Senator **RUDMAN**. Thank you very much, General.

I just want to say, Mr. Chairman, that I think the Army is well represented by the Secretary and General Wickham.

Senator **STEVENS**. Senator Stennis.

Senator **STENNIS**. I agree. It is a fine presentation they have made. It is encouraging to see the knowledge that they have.

Senator **STEVENS**. I have a series of questions that I would like to represent to you gentlemen for the record. They will appear at the conclusion of this hearing.

I do want to thank you for your presentation. It is the first for the Army. We will have a series of detailed hearings. We are pleased to have your presentation.

The Army is well served by the two of you.

Secretary **MARSH**. Thank you.

Senator **STENNIS**. We are delighted at the response, of course, in Grenada and the overall ability of the Army to continue to maintain its very high morale.

I want to know that, despite the comments, you may have interpreted as being antognostic from me, I have the utmost admiration for the jobs you are doing.

I do have other questions, particularly on this problem of the civilian sector. I don't think anyone realizes the morale downturn as far as the pay issue is concerned. I think the morale factor is tethering on the brink of a real problem.

Part of it is in comparability. I don't disagree with you about your comparability with some other areas, but with the private sector you ought to run that comparability sometime and see what will happen.

We will be going into that further.

SUBMITTED QUESTIONS

The submitted questions referred to earlier, together with the Department's answers, will be placed in the record at this point.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

INCREASE IN OFFICER MANYEARS

QUESTION: In Fiscal Year 1985, the Army is planning to increase its officer manyears by 1,600 while reducing enlisted manyears by 2,700. What requirements are causing this shift in emphasis to officer personnel?

ANSWER: The shift in manyears is the result of efforts to achieve the authorized end strength. The increase in officer manyears reflects Army effort to attain the officer end strength which increased by 2,700 from FY 83-FY84, and an additional 500, from FY 84 to FY 85. This modest growth when taken in context of the total program was/is necessary to support long overdue Army modernization initiatives, efforts to improve unit readiness, such as increasing authorized levels of organization in combat units, and the activation/reorganization of units; i.e., the new ranger battalion, the initial implementation of the new light infantry division and the coincidental reorganization of heavy divisions.

The FY 84 growth will be achieved with officer gains in May-Sept time frame which will generate fewer manyears than would have been available had the gains occurred earlier in the year; but they will be available through all of FY 85.

It is important to note that although officer end strength has increased modestly, the percentage of officers to total Army end strength has and will remain constant (approximately 14%).

DIVISION AIR DEFENSE (DIVAD) GUN

QUESTION: As of a few weeks ago, the Army had yet to accept the first DIVAD gun that was rolled out last September and production of subsequent units was behind schedule. What is the problem?

ANSWER: Contractor start-up problems in both manufacturing and acceptance testing have caused a delay in the program. After the first DIVAD gun rolled out last September, it was shipped to the contractor's test site at San Juan Capistrano. At Capistrano, the fire unit underwent initial system integration, preliminary testing and the series of acceptance tests (November 17, 1983, to December 10, 1983). These operations uncovered several system integration problems as well as problems with the test procedures. From December 11, 1983, to January 24, 1984, upgrades to hardware and software were incorporated and test procedures were rewritten. A recertification test and a reliability verification test were completed in the period of January 25, 1984, to February 4, 1984. Review of test data revealed minor software problems that were corrected and necessary retests conducted during the period of February 23, 1984, to February 28, 1984. It is expected that the fire unit will be accepted by the Army and shipped to Fort Bliss, Texas, in early March for further testing.

Production of subsequent fire units is behind schedule due to late changes required in the manufacturing process and incorporation of changes stemming from problems noted during testing of the first fire unit.

QUESTION: Has the DIVAD production program been restructured? What impact does that have on your 1985 request?

ANSWER: An in-depth review of the DIVAD program has been conducted by the Ford Motor Company, Ford Aerospace and the Army. A new, balanced manufacturing plan has been developed by Ford and submitted to the Army. That plan, which is currently being analyzed by the Army, would complete deliveries for the FY83 buy (Option II) two months behind the contract schedule. This restructured program would have no impact on the 1985 budget request because the remainder of the delivery shortfalls (14 fire units) would be made up during the FY84 funded delivery period.

CHEMICAL WARFARE

QUESTION: Mr. Secretary, last year you requested both facility and production funding for your 155-millimeter binary chemical round. What has changed that now requires only $14 million in advance procurement funds and no facility or production funds?

ANSWER: Nothing has changed in our position on the need for the munition. There is still an extremely dangerous disparity in favor of the Soviets in the ability to wage chemical warfare. Although our overriding chemical warfare objective is a comprehensive, verifiable ban on the development, production, and stockpiling of chemical weapons, the Soviets will have little incentive to negotiate away their superior capability, unless we modernize our stockpile.

Although Congress did not appropriate funding for the needed capability last year, the FY 1984 Defense Authorization Act does provide a framework, balancing resolve and restraint, to progress toward our ultimate goal of eliminating the spectre of chemical warfare. The Act authorizes production facilities and initial procurement of chemical munitions but prohibits the final assembly of any weapons until 1 October 1985 (FY 1986). This has put some leverage on the arms control process by authorizing preparation steps to reestablish a credible deterrent, while allowing time to achieve an effective treaty before any weapons are actually produced.

Our FY 1985 funding proposal marries program requirements with the intent of the FY 1984 Authorization Act. Thus for the 155mm binary chemical munition we are requesting only long-lead components at a cost of $13.0 million. Before we can complete these munitions, Congress will have to provide the additional funds to procure the remaining components and to cover final assembly costs. Furthermore, although we have sufficient stocks of DC (a precursor to one of the components) to support the first year's procurement, we will need to build a DC production facility in order to support the full buy of 155mm chemical munitions.

ARMY CHEMICAL RETALIATORY CAPABILITY

QUESTION: Could you initiate production of the Army's 155-millimeter chemical round in 1986 as now planned without any of these 1985 advance procurement funds?

ANSWER: No. Since it will take at least 18 months to procure some of the required munition components, a lack of funding in FY85 will delay production capability beyond 1986.

PERSHING II

QUESTION: You are already experiencing cost problems with the PERSHING II missile. What impact will the stretch out in Pershing II production have on readiness and operational capability?

ANSWER: It is not anticipated that the stretch out in production will have any impact on the readiness of the Pershing II units. Sufficient funds have been appropriated to provide for the initial deployment and early years of operational firings.

BALLISTIC MISSILE DEFENSE TRANSFER

QUESTION: If we remove the Ballistic Missile Defense Program from the comparison, Army research and development under the fiscal year 1985 budget has a real growth of 26 percent. Why do you require such sharp growth in R&D?

ANSWER: From FY 74 - 81 the Army experienced little or no real growth in its RDTE appropriation. During the same timeframe the Soviets greatly expanded their modernization program resulting in significant advances in their equipment. It has only been in the past three years that with Congressional support we have been able to accelerate our own modernization program. While we have been able to make progress in selected programs, many other needed modernization efforts have either been delayed or stretched out. The growth requested in our FY 85 budget request is strongly needed in order to make up for time lost during the 1970's, to accomplish a balanced modernization program, and to take advantage of new technological opportunities.

QUESTION: As part of the strategic defense initiatives the 1985 budget consolidates all the various space defense program funding in the Defense Agency accounts but with management left at the military service level. Is the Army satisfied with this funding management for its ballistic missile defense program?

ANSWER: The DOD Directive for management of the Strategic Defense Initiative (SDI) research and technology program has not as yet been finalized. Several draft directives have been staffed with the participating Services and Agencies for review and comment. The Army supports DOD control of SDI and feels confident that working together we can establish a satisfactory working relationship.

QUESTION: Do you believe you can exert adequate control over your BMD program with money allocated to you from the Departmental level?

ANSWER: As was addressed in the previous answer, the DOD Directive for management of the Strategic Defense Initiative has not yet been finalized. If areas of responsibility and channels of communications are clearly established between the DOD account managers and the Services, and, if the Army is afforded the opportunity to participate in the development of programs and budgets from the outset, there should not be a problem in exercising adequate fiscal control during the budget execution process. However, frequent DOD changes in program thrusts with concomitant resource adjustments during current and budget years could pose serious management problems to the Army

BMD effort due to the impact resource changes cause in program executability, particularly during the current and budget years.

QUESTION: We understand the Army BMD increases from $500 million to $842.5 million. What initiatives require this sharp funding increase?

ANSWER: The Army expects to have a portion of each of the five program elements in DOD's FY 85 Strategic Defense Initiative (SDI) program. The Army's FY 84 BMD program had only two program elements and addressed the same kinds of technologies as SDI seeks. The expected funding should be at a level now where we can take advantage of technological break-throughs as they occur and step up the pace of our research. The following table compares FY 84 with anticipated FY 85 funding levels by SDI category:

		($ Millions)	
	FY 84	FY 85	Change
Surveillance, Acquisition & Tracking	237	400	163
Directed Energy Weapons	22	78	56
Kinetic Energy Weapons	168	279	111
System Analysis/Battle Management/ Command, Control & Communications (C^3)	45	85	40
Support Programs	28	0	(28)
	500	842	342

I want to reemphasize that the $842.5 million are a part of the President's Strategic Defense Initiative, and are therefor OSD rather than Army funds.

LHX PROGRAM

QUESTION: The Army wants to accelerate the operational target for the LHX helicopter program from FY 1994 to 1992. Why is this necessary, and what is the estimated added cost of this acceleration?

ANSWER: There are two principal reasons. First, it will correct, as soon as possible, tactical and logistical deficiencies of the current light helicopter fleet that will have become serious by the 1990's. Second, it will reduce estimated program costs. The Army's light helicopter fleet of 7000 is becoming obsolete. Eighty percent of our light helicopter fleet will be 20 years old by 1992. Accelerating the program corrects the light fleet deficiencies earlier, and gives the Army a more efficient, affordable combat system sooner.

To accomplish the acceleration RDTE funds were moved forward but overall RDTE costs were not increased.

QUESTION: What is your total projected cost for the entire LHX program, and why is such a large and expensive undertaking necessary at this time?

ANSWER: The Army's total estimated research and development costs for LHX are not yet fully defined. Initial estimates are in the 3 billion dollar range for proof of concept, the air vehicle, mission equipment, training and simulators, weapons integration, and systems integration.

It is necessary to begin now because of the age and mission obsolescence of the light fleet.

JVX

QUESTION: Is the Army definitely and finally out of the JVX tilt-rotor development program supported by the Marine Corps? How will that affect your vertical lift requirements?

ANSWER: The Army will not participate in the JVX development program. This will not affect the vertical lift requirements currently in the Army's plans, although if the Marine Corps developed JVX works out, the Army may consider acquiring some in lieu of additional CH-47 helicopters.

155 - MILLIMETER NUCLEAR ROUND

QUESTION: The Army is continuing to budget R&D funds for the 155-millimeter nuclear round, but the Department of Energy is not seeking funds for its portion of the program. What's the situation here?

ANSWER: The Army and DOD strongly support the requirement for the W82, 155mm nuclear round to preserve the deterrent value of our non-strategic nuclear forces at the lowest possible level of weapons. We are complying with the Congressional directive to terminate the program. We have asked for DOD RDT&E money to fund completion of a limited technical data package to capture the results of the very successful R&D effort. DOE is supporting this effort using RDT&E funds which were authorized and appropriated in FY84.

QUESTION: Is a tactical nuclear weapon of this type going to be required within our new emphasis on conventional deep strike weapons?

ANSWER: Yes. Short-range nuclear forces are an essential component of the NATO triad of conventional forces, non-strategic nuclear forces and strategic nuclear forces. These systems help off-set the Soviet's massive numerical advantage in conventional weapons. The mere presence of these nuclear weapons on the battlefield could force the Soviets into dispersed formations, thus slowing the momentum of an attack, and permitting enemy forces to be more easily engaged by conventional weapons. In this sense, short-range nuclear weapons and conventional munitions complement, rather than compete with each other. In another vein, short-range nuclear forces are needed to ensure that NATO has the ability to deter aggression at any level and would not be compelled, because of a lack of capability, to unwarranted use of longer range or strategic nuclear weapons.

BINARY CHEMICAL MUNITIONS

QUESTION: If we do not proceed with the production of modern binary chemical munitions, how well can we deter the Soviet Union from making massive use of chemical weapons in the decisive opening stages of a war in Europe?

ANSWER: Unless we improve our stockpile by acquiring new munitions, we will be unable to deter the Soviets from resorting to chemical warfare.

The Soviet chemical threat is substantial. Given their large offensive and defensive chemical warfare capability, the Soviets could gain a major edge over NATO by attacking with chemicals.

The capability of our stockpile to deter the Soviets from resorting to chemical warfare is marginal, and will continue to erode. Our tactically useful portion is limited. There is a mismatch of munitions to weapons systems. The lack of an effective deep strike persistent agent munition will deprive us of the ability to degrade/disrupt follow-on forces and the Soviet logistical support lifeline. All munitions in our stockpile are old and their long term serviceability is questionable. Our planned acquisition of the binary munitions will largely eliminate these deficiencies and restore the deterrent value of our stockpile.

CHEMICAL WARFARE

QUESTION: If the Soviet Union were to employ persistent lethal chemical agents, dispensed from tactical missiles and aircraft at long ranges over key support facilities in our rear areas, what what would our option be to prevent a decisive defeat on the battlefield, as things stand today?

ANSWER: The Soviets can contaminate our logistical support areas hundreds of kilometers to the rear. Such a Soviet persistent agent chemical attack on our vital logistical facilities has the potential of throttling our support to our fighting forces to a trickle. The support troops will be forced to operate in protective clothing (which will severely affect efficiency). They will be forced to divert substantial efforts to decontaminate facilities and supplies or forward contaminated supplies which could cause casualties among the recipients of these supplies--our fighting forces. As the support diminishes and our troops run out of "bullets and beans" the momentum of the battle will shift toward the Soviets. In such a situation our commanders will be faced with the choice of surrendering, or recommending escalation to a nuclear response--not a desirable option given the present US-USSR tactical nuclear balance.

QUESTION: What is the effect on the nuclear threshold of the U.S. lack of an effective chemical warfare offensive and defensive deterrent capability?

ANSWER: One overriding theme among Americans on all sides of defense issues has been the desire to keep the nuclear threshold as high as possible, to prevent nuclear war. We and our allies are investing billions of dollars in conventional forces to have the capability to turn back a Soviet conventional attack without automatic or early recourse to nuclear weapons. However, our lack of an effective retaliatory chemical capability could allow the Soviets to negate these conventional force improvements. In this regard, it is crucial to appreciate the importance the Soviet armed forces assign to chemical warfare in their combat doctrine. Let there be no doubt about the issue here: If we do not restore a credible chemical retaliatory capability, nuclear weapons are all we have left to deny the Soviets a cheap victory from chemical use.

QUESTIONS SUBMITTED BY SENATOR WEICKER

SECOND PRODUCER FOR M1 TANK ENGINE

QUESTION: As you remember, Secretary Marsh, there was a great deal of controversy in Congress last year over the Army's proposal to establish a second producer for the AGT 1500 turbine engine that powers the M1 tank. The fiscal year 1984 defense appropriations bill directed further study of the issue. Mr. Secretary, I would like to ask you a few questions on this subject.

Has the Army completed its study on the desirability and feasibility of establishing a second producer for the M1 tank engine? If so, what were its findings and recommendations? If not, when will it be completed?

ANSWER: The Army's analysis has determined that it is in the best interest of the government to establish a second source for the AGT 1500 engine. The potential for cost savings, further improvements in quality and value engineering productivity changes strongly support that conclusion and it has been recommended.

QUESTION: The Appropriations Committees directed the Secretary of Defense to conduct an independent study of the feasibility and cost effectiveness of establishing a second producer for the M1 tank engine. That guidance is contained in the conference report on the fiscal year 1984 bill. Has the Army provided the Secretary of Defense with the technical and cost data necessary for the completion of such a study? If not, what are the Army's plans in that regard?

ANSWER: The technical and cost data have been developed and the study is in process.

QUESTION: The budget includes a request for $1.8 billion to procure 720 M1 tanks. Would any of those engines be produced by a second source?

ANSWER: No. Delivery of FY85 funded tanks begins in February 1986 and ends in January 1987 (7th production year). The Government has not awarded a second source contract. However, should the Army recommend and the Congress approve establishing a second source for the engine, the earliest delivery of an engine for tank production would be November 1987.

QUESTIONS SUBMITTED BY SENATOR MCCLURE

SOVIET ABM SYSTEM

QUESTION: How many Soviet ICBMs [deleted.]

ANSWER: [Deleted.]

QUESTION: If SAM-12, SAM-10, or SAM-5 interceptors and radars [deleted.]

ANSWER: [Deleted.]

QUESTION: What percentages of Soviet ICBM warheads [deleted.]
ANSWER: [Deleted.]

BALLISTIC MISSILE DEFENSE

QUESTION: How much would it cost to reactivate the over 100 U.S. Spartan and Sprint ABM Interceptors and the Grand Forks ABM complex using the Safeguard system? How soon could this be done?

ANSWER: The reactivation of the Safeguard system would cost 4 to 5 billion (FY 84) dollars and would take approximately(d) years.

(Deleted)

Department of Energy cost of warhead refurbishment is not included.

(Deleted.)

Estimates are rough-order of magnitude. A new study with specific parameters would be required to refine the data.

As the President's Strategic Defense Initiative comes into being, the Army feels its efforts are best directed to supporting that effort rather than in trying to breathe life into an (deleted.)

RETIREMENT PAY

QUESTION: What is the total increase in the Defense Department budget which is for retirement pay? About $17 billion.

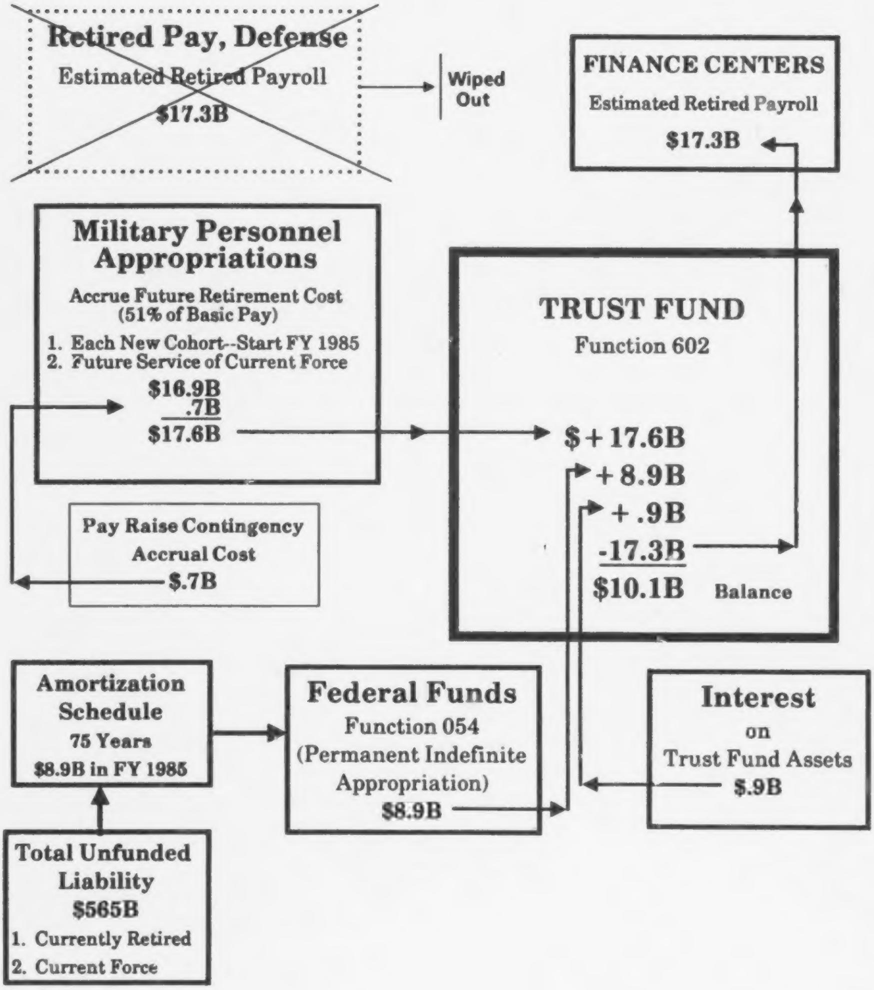
ANSWER: Beginning 1 October 1984 (FY 1985) the Retired Pay, Defense appropriation from which retired members and survivors are currently paid, will be discontinued. The $17.3 billion in estimated payments has been deleted from the DOD budget. DOD will budget only for the future retirement costs accruing for service earned after 30 September 1984. It has been determined that the accrual cost will be 51 percent of basic pay.

The estimated costs in FY 1985 are $16.9 billion, which by law has been included as an element of cost in the ten Military Personnel appropriations. Since the accrual charge will be a percentage of basic pay, included is an additional $698 million in the pay contingencies account to reflect the accrual cost of the proposed 5.5 percent pay raise. DOD will transfer accrual amounts on a monthly basis to a new trust fund.

There will be no change to government-wide outlays as a result of the new system. Payments to retirees will be the same but will be paid from the trust fund rather than DOD appropriation. Defense Budget Authority and Outlays will increase slightly, because the accrual costs of future pay raise estimates are included. Government-wide Budget Authority will increase by the yearly amounts appropriated for liquidating the unfunded liability which is programed in the budget at $9.8 billion (including interest on assets). This represents the liquidation of the $565 billion liability over a 75-year period.

The following chart graphically displays the fund flow under the retired pay accrual system.

FUNDS FLOW
MILITARY RETIREMENT, FY 1985


~~Retired Pay, Defense~~
~~Estimated Retired Payroll~~
~~$17.3B~~
Wiped Out
FINANCE CENTERS
Estimated Retired Payroll
$17.3B
Military Personnel Appropriations
Accrue Future Retirement Cost (51% of Basic Pay)
1. Each New Cohort--Start FY 1985
2. Future Service of Current Force
$16.9B
.7B
$17.6B
TRUST FUND
Function 602
$ + 17.6B
+ 8.9B
+ .9B
-17.3B
$10.1B
Balance
Pay Raise Contingency
Accrual Cost
$.7B
Amortization Schedule
75 Years
$8.9B in FY 1985
Federal Funds
Function 054
(Permanent Indefinite Appropriation)
$8.9B
Interest
on
Trust Fund Assets
$.9B
Total Unfunded Liability
$565B
1. Currently Retired
2. Current Force

SALT I ABM TREATY

QUESTION: Are the Soviets "breaking out" of SALT I ABM Treaty?

ANSWER: The ABM Treaty and its protocol places limits on the ABM system around Moscow and prohibits ABM system deployments beyond the Moscow area. The Soviets are upgrading and expanding the ballistic missile defense system at Moscow but are thus far remaining within the limits of the treaty. [Deleted]

COST OF GRENADA OPERATION

QUESTION: What was the cost of the October 1983 Grenada Operation? Will a supplemental appropriation cover this cost?

ANSWER: The Army has identified $68.7 million as the costs of the Grenada operations. DoD will include $52.9 million of this amount in the DoD FY 1984 Program Supplemental to be submitted later this fiscal year. The $15.8 million increment between the above amounts is the estimated procurement costs for aircraft spare and replacement parts, aircraft battle damage, missiles and component parts, ammunition expended, and combat vehicle items. A management decision was made to seek recoupment only for operational costs and to absorb procurement costs.

COST OF BIG PINE EXERCISES

QUESTION: What is the cost of the Big Pine I, II and III operations in Honduras?

ANSWER: HQDA does not routinely capture the total costs of specific exercises within its accounting system. However, major Army commands do receive a cost report of O&MA expenses from the Exercise Executive Agent (usually a Corps or Division) normally within 90 days of the end of the exercise. Operations and Maintenance, Army costs attributed to BIG PINE I and BIG PINE II (which ended February 1984) are estimated as follows:

(Estimated $ in Millions)

	BIG PINE I	BIG PINE II	
APPROPRIATION	FY83	FY83	FY84
O&MA	.4	13.4	17.0

BIG PINE III is still in the planning stage. The next JCS joint, combined, multi-national exercise to be conducted in Honduras this year will be GRANADERO I. O&MA costs are estimated at $10M.

QUESTIONS SUBMITTED BY SENATOR ANDREWS

Camouflage Screen Production Contract

The Army is currently reviewing its acquisition strategy for procurement of approximately 260,000 camouflage screen systems for award in FY 84.

In accordance with the House of Representatives Report 98-427 and United States Senate Report 98-292, the Army's acquisition plan will consider the requirements for broadening the industrial base, continued small business participation, competitive requirements, manufacturing capacity and cost. The acquisition plan is currently being staffed within the Department of the Army.

QUESTION: I have been informed that the Army has awarded multi-year contracts to Devil's Lake Sioux Manufacturing Co. for camouflage screens and support systems. However, I am informed that there were 28,000 camouflage screens taken out of the small business set-aside 8(a) classification.

- Have these 28,000 camouflage screens been competed?
- Why did the Army take these screens out of the 8(a) classification?
- How will these screens be competed?
- When will these screens be competed?
- Are you aware that the new contracts for the screens are costing the government less than at any time in the past ten years?

ANSWER: No. The 28,000 have not been competed. That quantity will be included in the Fiscal Year 1984 competition.

Last year's acquisition plan provided for 36,000 screen and support systems to be awarded to Devil's Lake Sioux Manufacturing Corporation under 8(a) procedures. When Devil's Lake Sioux Manufacturing Corporation successfully bid and won the contracts for 28,000 screens which were competed under small business set aside procedures, 8,000 screens were withdrawn from the total of 36,000 8(a) quantity and awarded to Devil's Lake Sioux Manufacturing Corporation. This gave Devil's Lake Sioux Manufacturing Corporation a total of 36,000 screens and 36,000 support systems as originally proposed and approved in the acquisition plan.

The 28,000 were competed under small business set aside procedures in order to develop additional production sources. To award both the 8(a) and small business set aside portions to Devil's Lake Sioux Manufacturing Corporation would have been in contradiction with efforts to broaden the industrial base and develop new sources.

The 28,000 screen systems will be included in the FY 84 competition. The acquisition plan for the FY 84 solicitation is now being staffed within the Department of the Army.

Yes. The camouflage modules do cost less as a result of the Army's most recent acquisition method. Some of the factors which contributed to a lower cost were that the total quantity purchased was larger than in previous years, the awards were made on a multi-year basis, there was competition, and the majority of the specifications changed from a design to a performance requirement which helped to bring in competition.

QUESTION: I am also aware of plans by the Army to establish a color coding line for the camouflage screens. These plans call for government furnished equipment to be installed in a plant in order to provide the color coding material.

With a government investment already totaling $1.2 million in Devil's Lake Sioux, has the Army seriously looked into simply and cost-effectively installing equipment into the Devil's Lake Sioux facility?

ANSWER: One of the reasons for bringing in new manufacturers is to establish a new source for the color coding line. However, the plans do not call for the government to furnish any equipment or special production tooling. Army has no plans for providing any government furnished equipment or tooling for instant requirements.

If the Army were to install color coding equipment at Devil's Lake Sioux Manufacturing Corporation (DLSMC) it would be in contradiction with the guidance in the House of Representatives Report 98-427 and United States Senate Report 98-292 which call for expanding the industrial base and increasing competition.

Current Army acquisition strategy will insure competition while allowing participation by experienced as well as new producers.

READINESS

QUESTION: In April last year, an article in Defense Week revealed that the Army's combat readiness was at a serious low and that in a war in Europe, the Army..."may well be brought to their knees within 60 days, because its maintenance companies would not be able to repair battle-damaged tanks, armored fighting vehicles"...and other equipment. Also mentioned in the article were problems in the Army over the serious lack of training in the Army's maintenance companies on high-tech weaponry such as turbine and laser technology on the M1 tank. Where in the FY 85 budget has the Army addressed this problem?

ANSWER: New Equipment Training (NET) includes provision for training of maintenance personnel. When a division undergoes NET for a new system, organizational and direct support (DS) maintenance personnel are trained at the same time as operators and crews. General support (GS) and depot personnel/units are trained separately, before user NET. This training is reflected in the FY 85 budget under the operations and maintenance Army (OMA) appropriation under Program 7, based on OMA costs for each new system's fielding.

QUESTION: How much money is included for training maintenance companies on high-tech equipment?

ANSWER: There are 783 current NET plans. The system is not yet automated, and the information requested is not categorized by separate program element within the 783 programs. If the information is deemed necessary, 3-5 full man-days must be allowed for extraction and consolidation following notification.

QUESTION: How much money is included in the FY 85 budget for tools, test equipment and manuals to the M60A3 and M1 tanks, or the 155-millimeter howitzer?

ANSWER: The M1 is a new production vehicle. As such, only M1 tank-peculiar support equipment (special tools, special test sets and preparation/maintenance of technical manuals) are budgeted in the M1 procurement line. In FY 85, $70.9 million is requested for special tools and test sets, and $2.6 million for manuals.

The M60A3 tank is out of production for the US Army. The M60 line is for procurement of modification kits to convert M60A1 tanks to M60A3 tanks only. The modification line procures special tools and special test sets for these M60A3 modification kit items. $1.4 million is requested in the FY 85 budget.

For the M109 and M198 155-millimeter Howitzers, the FY 85 budget requests $3.4 million for special tools and test equipment, and $0.7 million for manuals.

QUESTIONS SUBMITTED BY SENATOR KASTEN

LOCATION OF A LIGHT DIVISION

QUESTION: Mr. Secretary, there has been talk recently about the creation of a seventeenth Army division which would be either a Light Division or even what has been called a "superlight" division. As you know, my state of Wisconsin does not receive a great deal in the way of defense spending, and we are always looking for ways to increase our share, as of course are the other states. I know that my colleagues from the other states would be happy to provide a home for a new Army division, but I would like to beat them to the punch by suggesting that you seriously consider Fort McCoy as a possible location for the next division that is authorized.

ANSWER: A decision on stationing of the 17th Active Compoment Division has not yet been made. A range of installations in the United States which could accommodate the division is being examined. Key considerations include: strategic positioning, training areas available, facilities available, future construction costs, as well as environmental and community impacts. An onsite survey is being conducted by Headquarters, Forces Command. The results of that survey will be forwarded to Headquarters, Department of the Army during April 1984.

BRADLEY FIGHTING VEHICLE

QUESTION: Mr. Secretary, it is not unusual for critics of defense spending to claim that a given system is too expensive. More troubling is the charge that a system does not work, or indeed that it endangers the very men who operate it in combat. No system that I know of has been the object of more criticism of this sort than the Bradley Fighting Vehicle. I know that the Army supports this vehicle very strongly. What is your response to those who claim that the vehicle is not only costly, but a threat to those who operate it?

ANSWER: The capabilities that the Bradley Fighting Vehicles add to the Army make it a very cost effective vehicle. Since the Bradley has been in production the cost of the program has been stable. The procurement unit cost of $1.42 million has only increased this year due to the added value of the TOW 2 subsystem.

The Bradley Fighting Vehicles give our mechanized and cavalry forces the ability to complement the M1 Abrams tank battalions and squadrons, kill the best of the Warsaw Pact tanks, fight on the move day and night, and conserve our most critical resource - soldiers. It is the ability of the Bradley Fighting Vehicles to bring all of these capabilities to bear with a constrained manpower ceiling for our forces, that make it an extremely cost-effective system.

The survivability of the Bradley crews is significantly improved over their exposure in M113's. Bradleys provide 14.5mm KE protection while the M113 provides only 7.62mm. Furthermore, the spaced laminate side armor, and halon fire extinguisher provide a measurable reduction in the lethality of hand held antitank weapons such as the RPG-7.

We are conducting further tests on the after-armor effects of large shape charged weapons to determine what contribution more reactive aluminum armor makes versus steel. To date we have not learned anything new to support allegations made in the press last year.

Army Reserve Components

QUESTION: Mr. Secretary, the Army is to be commended for attempting in its budget this year to upgrade the equipment of the Guard and Reserve. I am a strong supporter of the Guard and Reserve and would like to see them used by the Services even more than they are. How do you assess the quality of your Guard and Reserve units? How do they fit into your mobilization plans? Are the Guard and Reserve attracting sufficient manpower to fill out their existing units?

ANSWER: The assessment of quality of National Guard and USAR units is accomplished through field visits, commanders' conferences, Unit Status Report (USR) submissions and Reports of Annual Training Performance. As stated in this year's Army Posture Statement, some Reserve Component Units have not met the desired standards of readiness, especially combat service support units. Despite these shortfalls, our current subjective assessment of Army National Guard and USAR units indicate that they are continuing to experience a steady increase in quality.

Reserve Component units have been increasingly prominent in our mobilization plans. The Army considers mobilization of all or part of the National Guard and USAR essential to a successful prosecution of any major contingency operation. The extent of our reliance on the Reserve Components can be seen in our force structure: 51% of our combat battalions and 67% of our combat service support forces are in the National Guard and USAR. This reliance is even greater for specific types of units. For example, 80% of our supply and service companies and 73% of our hospitals are Reserve Component units. In total, nearly 48% of the forces scheduled to deploy to Europe in the first 30 days of conflict are National Guard or USAR. To meet this significant requirement, the Army has developed detailed plans for the mobilization of the Reserve Components and tests those plans frequently in local and national exercises.

The Army National Guard enlisted 89,103 people in FY 83 and the Army Reserve enlisted 74,144. As a result, the Paid Drill Strength of the Army National Guard grew by 7.2K in FY 83 and the Paid Drill Strength Army Reserve grew by 8.1K.

In FY 84 both the Army National Guard and the Army Reserve are experiencing difficulty attracting as many enlistees as they need to fill their units. Thru January '84 the Army National Guard is 37.5 percent (12.9K) below its enlistment objective for FY 84 and 33.0 percent (10.6K) below its enlistments for the same period of FY 83. Thru January '84 the Army Reserve is 8.0 percent (1.7K) below its enlistment objective for FY 84 and 9.2 percent (2.0K) below its FY 83 results for the same period.

The problems being experienced by Guard and Reserve recruiters reflect a fundamental change in the market place. This change is attributed principally to the improved economy. This situation will make recruiting difficult for the remainder of FY 84 and on into FY 85.

Additional resources from Congress may be required in FY 85 if the downward trend in recruiting continues.

REORGANIZATION OF THE JOINT CHIEFS OF STAFF

QUESTION: Mr. Secretary, military reform is a popular topic on the hill these days. Unfortunately, it has become such a broad term as to have lost a great deal of its meaning. For some it is a convenient veil for merely cutting the defense budget while claiming to be for a strong defense. But it seems to me that one of the areas where some of the suggestions of the reformers have a great deal of merit is organization. What are your comments, for instance, on the proposed reorganization of the Joint Chiefs of Staff? What about proposals to have the Army move to something aproximating the British Regimental System as a way of establishing a high level of unit cohesion, and morale?

ANSWER: Over the last few years there have been a number of proposals to reorganize the Joint Chiefs of Staff. Perhaps the key issue in most of these proposals centers around the role of the Chairman of the Joint Chiefs of Staff. One example is the legislation which would formally place the Chairman in the national military chain of command. This legislation would make explicit the Chairman's function as a link between the Secretary of Defense and the unified and specified commands and is a sound idea. Making the Chairman of the Joint Chiefs of Staff a member of the National Security Council, however, is not necessary. The role of the Chairman and the operation of the Joint Chiefs of Staff in large measure depend on the relationships of the individuals and the management style of both the Chairman and the Secretary of Defense. Secretary Weinberger and General Vessey have developed a relationship and a management style that have been very effective. Under these circumstances, no substantial changes in organization or operation of the Joint Chief of Staff are necessary.

The Army is in the process of implementing a U.S. Army Regimental System. Although there are some similarities to the British Army Regiments, our system is unique to the U.S. Army and is designed to enhance the sense of belonging and personal identity of American soldiers with their units under the Army's New Manning System. Sixty-four active component combat arms (Infantry, Armor, Field Artillery, Air Defense Artillery) regiments have been approved for implementation, of which 14 will be established by the end of FY 84. Additional regiments for Engineers, Aviation, and Cavalry are under study which could eventually bring the total of active component U.S. Army regiments to approximately 100. Under the U.S. Army Regimental System, soldiers will be affiliated with a particular regiment for their careers, serving recurring tours of duty with the battalions of their regiment. This grouping of battalions becomes the soldier's family, his home, and will offer long term stability and predictability of assignments. This system will facilitate affiliation with an organization by promoting identification with a group of units. In addition, soldiers' affiliation with their regiments will foster cohesion by keeping soldiers together and will enhance loyalty by narrowing the circle of their professional relationships, allowing for close association between leaders and peers. These factors directly influence the development of unit cohesion, high morale, and combat effectiveness.

AIRLIFT AND SEALIFT

QUESTION: Mr. Secretary, do you believe that enough of the defense budget is spent for airlift and sealift? If circumstances force you to make such a decision, would you be willing to forego something in your own budget in order to allow an increase in the Air Force and Navy budget for airlift and sealift?

ANSWER: No. Conventional deterrence is dependent on the ability of our forces to rapidly deploy military power to points where our national interests are threatened and sustain them there until a favorable outcome has been achieved. The Army depends upon the other services to deploy our forces.

[Deleted].

The Air Force and Navy have developed programs which provide partial solutions, however, there continues to exist a need for inter-theater/intra-theater air and sealift above that which is currently programmed. The current airlift program for the C-5B, KC-10, and Civil Reserve Air Fleet (CRAF) is moving in the right direction to meet Army mid-term objectives. However, it must continue beyond the current program to achieve the 66 million ton-miles per day (MTM/D) capability recommended by the Congressionally Mandated Mobility Study (CMMS).

[Deleted].

The Navy is working closely with the Army to develop sealift programs to satisfy our needs. Action is ongoing to increase the size of the Ready Reserve Fleet (RRF) from its current ship configuration to 77 by 1988 to improve the Army's ability to meet it's early deployment requirements. Significant capability to meet Army fast sealift requirements exists in the Navy's SL-7 acquisition and conversion program. In addition, Navy procurement of Seasheds and Flatracks will allow the Army to move its equipment on containerships.

With respect to foregoing something in the Army budget in order to allow an increase in the Air Force and Navy budget for airlift and sealift, I don't see how we can accept any budget reductions. The Army is structured to meet the threat. Essential modernization initiatives are underway to field a creditable force. We have budgeted and requested what we need; no more, no less. Hard choices have been necessary in the past and will continue to be necessary in order to guarantee the capability of the Total Army to meet its responsibilities.

Modernizing and equipping America's Land Power must continue at a constant pace if the Army is expected to perform its dual role of deterrence and combat readiness. To deter, as well as to fight, a force must not only be strong but must also appear to be strong. America can afford to be strong; it cannot afford to be weak.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

SOVIET BUDGET

QUESTION: You will spend 34 percent of your FY 85 budget for personnel. What portion of the Soviet Army's budget is spent for personnel?

ANSWER: In a dollar-to-dollar comparison, we estimate that the Soviet Military spends slightly less on personnel than we do--about 32 percent.

QUESTION: If your FY 85 personnel request is approved as submitted, the Army will be composed of 780,800 active duty military personnel and 745,730 Reserve Component personnel, supported by approximately 402,000 Department of the Army civilians. While Soviet Army categories of personnel and activities do not precisely match ours, what portion of their force would you consider to be active duty? Reserve Component? Civilian?

ANSWER: There are no "reserve" units, as we know them, in the Soviet Army. Instead, the Soviets maintain a large number (194) of active divisions, --most of which are maintained at reduced manning levels in peacetime. Of these 194 divisions, about 45 are Category 1 (manned at 75-100% of full strength); some 30 are Category 2 (50-75%); and approximately 120 are Category 3 (50% or lower). Upon mobilization, individual reservists are rapidly called up by local military commissariats and integrated into the active units. Presently, there are 1.9 million men on active duty in Soviet ground forces. Nearly 2 1/2 million reservists would be required to bring all ground force units to full wartime strength. In the last five years, about 5 million men have been released from active duty into the reserves, so they have more than enough soldiers with recent experience to fill out their ranks upon full mobilization. There are 305,000 civilians employed by the Soviet Army for support of their ground forces.

QUESTION: What advantages and disadvantages do you see for the Soviet Union as a result of the budget choices and personnel choices they have made, as outlined in your responses to the preceding questions?

ANSWER: The Soviets develop their military forces based, primarily, on perceived requirements of future war rather than on economic considerations. They believe that force superiority, achieved through both quantity and quality, is fundamental to success in war. To achieve this superiority, they spend much more (nearly 80% of military expenditures) on military investment (RDT&E, procurement, military construction) than on personnel. They also maintain a large active force, backed up by large manpower reserves. They can do this because universal conscription allows them to minimize personnel costs. Most conscripts receive the equivalent of about $10 per month.

Their budget choice allows the Soviets to field numerous state-of-the-art weapons, vehicles, and other items of equipment. In ground forces, for example, since 1970, the Soviets have fielded 3 new tanks, 9 new artillery weapon systems - at least 5 of which are self-propelled, and a new type armored combat vehicle on an average of one every two years.

Their personnel choice gives them several advantages besides low cost. Universal conscription and a 2-year term of active service result in a large segment of the population with prior military service. When released from active duty, all conscripts enter the reserves, where they remain until age 50. The total Soviet reserve force, for all services, numbers about 50 million men. Upon mobilization, reservists with the most recent active duty would be called up and rapidly integrated into the active force. This capability to generate quickly a very large force from an already-large standing force is a considerable advantage. In some areas, generally those not opposite NATO, some ground force divisions might lack cohesion and exhibit lowered levels of training immediately after mobilization. This possible shortcoming, however, would be insignificant in view of the sheer size of the Soviet force and the mechanism and resources -- already in place -- to mobilize rapidly, build cohesion, and raise proficiency by unit training.

LIGHT DIVISION

QUESTION: You have stated your plans to activate a second Light Division . The Army has not yet decided where this division will be based. Please provide the committee with a timetable for your decision on the basing issue and a narrative description of how the decision will be made, identifying with specificity the officials who will be involved in the process and their roles.

ANSWER: Before a final stationing decision is made, the Army must complete a complex series of evaluations which extend beyond purely military concerns. These requirements, many of which are based on statute, insure that appropriate consideration is given to the impact of each alternative on the environment and on the socio-economic balance of adjacent civilian communities.

HQ, Forces Command (FORSCOM) has been tasked to perform the required evaluations and to forward the results to HQDA for decision. We expect to receive those evaluations in early April 1984. Each interested Army Staff agency will review the FORSCOM plan and a coordinated recommendation for decision will be provided to the Army's leadership. It is premature to identify all of the officials who will be involved, or to establish a target date for decision. Those determinations can be made only after initial review of the issues identified in the FORSCOM plan.

QUESTION: Please provide the committee with a list of the factors which will be considered in your decision process to determine where the second Light Division will be based.

ANSWER: A broad range of installations in the United States which could accommodate the division is being examined. Key considerations include: strategic positioning, training areas available, facilities available, future construction costs, the need for an environmental impact assessment/environmental impact statement, and community impact analysis.

CALIBRATION EQUIPMENT

QUESTION: Beginning in FY 82, this committee adopted report language restricting the Army's purchases of calibration equipment. This report language has been approved by the committee in each succeeding fiscal year, because the Army has not yet provided the report originally requested. Yet, there have been reports that the Army has continued to procure this equipment. Please provide a list of all contracts awarded by the Army to purchase calibration equipment, both manual and automated, capable of calibration alternating current, direct current, or radio frequency devices beginning with FY 82. This list should be by contract and include for each contract the procuring agency; contract number; date of award; awardee; type of contract (i.e., fixed price, cost plus incentive, etc.); whether award was competitive, sole source, or under a restrictive bidding process; type of equipment procured (by National Stock Number and noun nomenclature, or commercial identification); per unit cost; total value of contract; and justification for procurement.

ANSWER: A summary listing follows which includes contracts awarded for DC and low frequency calibration equipment beginning in FY 82 up to the present. These listings are segregated into four (4) categories:

a. New Army requirements which constituted the initial or first-time procurement.

b. National Inventory Control Point requisitions which were for replacements or reprocurements of calibration equipment already in the Army inventory.

c. Customer orders received from other DOD agencies.

d. Foreign Military Sales requirements procured with non-US collars.

All contracts awarded were made by US Army Missile Command, Procurement and Production Directorate for requirements submitted by the US Army TMDE Support Group or the NICP. No contracts on the list were awarded with FY 84 funds. No contracts were awarded contrary to Congressional restrictions.

Codes contained in the contract listing are identified below:

APN - Army Part Number
MIS - Missile Interim Specification
MPN - Manufacturers Part Number
A - Automated
M - Manual
FFP - Firm Fixed Price
C - Competitive
SS - Sole Source
DS - Directed Source
LC - Limited Competition
FMS - Foreign Military Sales

ARMY NEW REQUIREMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
1.	Electric Calibrator (Power Meter) MPN: 11683A	M	HP 435/436	Hewlett-Packard	FFP	31 Jul 83	SS	DAAH01-81-C-B103 A11FQ926/927	38 ea $ 26,810	
2.	Electric Calibrator (Power Meter) MPN: 11683A	M	HP 435/436	Hewlett-Packard	FFP	4 Jan 82	SS	DAAH01-82-P-A013 A11FQP23	34 ea $ 22,967	
3.	Automated Meter Calibration System Including Software MPN: 27000 S/N 39-1001	A	Meters	Valhalla Scientific	FFP	10 Feb 83	C	DAAH01-82-C-A167 A12FQM26-29	1 ea $ 78,075	(Buy one and test)
4.	Automated Meter Calibrator System Including Software MPN: 7405A	A	Meters	John Fluke	FFP	10 Feb 83	C	DAAH01-82-C-A165 A12FQM18-21	1 ea $114,958	(Buy one and test)
5.	Automated Meter Calibrator System Including Software MPN: 600-IEEE	A	Meters	Roteck Instrument	FFP	10 Feb 82	C	DAAH01-82-C-A166 A12FQM22/24	1 ea $ 37,573	(Buy one and test)
6.	Oscilloscope Systems MIS-35808 NSN: 6625-01-148-6202	M	Transition Time	Tektronix	FFP	7 Feb 84	C	*DAAH01-84-C-0284 A13FQ403/4	15 ea $291,571	(Buy 15 and first article)

NOTES: 1)USATSG procurements awarded for DC/LF Calibration equipment between 9 Jun 81 and 21 Feb 84.
2)All contracts were awarded by MICOM, P & P Directorate
3)Justification for Procurement: See page title and principal application column.
* This 84 contract was awarded with FY 83 funds.

ARMY NEW REQUIREMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
7.	Video Bridge w/Opt IEEE 488 Interface & Calibration Pkg MPN:ES12110	M	Evaluation MACI	Electro Scientific	FFP	9 Apr 81	SS	DAAH03-81-M-2723 W80RA6-2075-0005	1 ea $ 5,625	
8.	Antenna w/Coupler MPN:599-825	M	Evaluation MACI	Tracor Instru	FFP	11 May 81	SS	DAAH03-81-M-3663 W80RA6-2075-0012	1 ea $ 675	
9.	Nanovoltmeter w/Opt 1488 Shorting Plug 1815 MPN:181	M/A	Evaluation MACI	Keithley	FFP	3 Apr 81	SS	DAAH03-81-M-2712 W80RA6-2075-0003 W80RA6-2075-0013	2 ea $ 5,430	
10.	Programmable DMM Nanovoltmeter, consisting of Opt IEEE-488, 1923 & Adapter 1924 MPN: 192	M	Evaluation MACI	Keithley	FFP	3 Apr 81	SS	DAAH03-81-M-2712 W80RA6-2075-0004	1 ea $ 1,515	
11.	DC Voltage Calibrator w/Precision MPN:2704 & Internal (IEEE-488) Data Coupler MPN:2701A	M	Evaluation MACI	Valhalla Scientific	FFP	11 May 81	SS	DAAH03-81-M-3662 W80RA6-2075-0011	1 ea $ 2,685	
12.	Nanovoltmeter w/1506 & cable MPN:181	M/A	AC/DC Difference (APSL)	Keithley	FFP	3 Dec 82	SS	DAAH03-83-F-0100	2 ea $ 5,908	
13.	Programmable DC Volt Std w/Opt B,C,D,J,AM-1 Programmable Amplifier MPN:RA4 MPN:501J	A	AC/DC Difference (APSL)	Electronic Dev Corporation	FFP	29 Nov 82	SS	DAAH03-83-M-0832	1 ea $ 5,500	

ARMY NEW REQUIREMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
14.	Relay Actuator MPN:HP59306A	A	AC/DC Difference (APSL)	Hewlett-Packard	FFP	20 Oct 82	SS	DAAH03-83-M-0381	2 ea $ 1,910	
15.	Precision Decade Capacitor MPN:GR1423A	M	Evaluation MACI	Gen Rad	FFP	10 Oct 82	SS	DAAH03-83-M-0147	1 ea $ 4,862	
16.	Precision Oscillator MPN:AUSTRON1250A	M	Evaluation MACI	Scientific Devices	FFP	22 Oct 82	SS	DAAH03-83-M-0150	1 ea $ 4,775	
17.	Graphical Display System MPN:R7613; 7A15A;7B53A; 7S11;7L12;552;011-0049-01; & 011-0099-00 w/Adapters & Cable Assemblies	M	Evaluation MACI	Tektronix	FFP	10 Jan 83	SS	DAAH03-83-F-0006	1 ea $ 19,797	
18.	Spectrum Analyzer MPN:630B	M	Evaluation MACI	Polarad Electronics	FFP	26 Jan 83	C	DAAH03-83-F-0435	1 ea $ 13,968	
19.	Digital Multimeter w/Opt 14,41 & 60 MPN:6001	M	Evaluation MACI	Racal-Dana	FFP	22 Oct 82	SS	DAAH03-83-F-0092	1 ea $ 5,080	
20.	Micro-System Troubleshooter w/Accessories Interface Pods JF 9000A-6502,-6800,-8080, -8085,-9900,-6802,-6809,-1802, -8048,-8088 & -86000; JF 9000A-900 Transit Case & JF Y8007 Mini Cassettes MPN:9010A	M	Evaluation Repair MACI	John Fluke	FFP	26 Nov 82	SS	DAAH03-83-M-0087	1 ea $ 17,716	

ARMY NEW REQUIREMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
21.	Instrument Control Sys w/320101 & 905080 MPN:4032;4040;&4023	A	Capacitance (APSL)	Albeco	FFP	29 Dec 82	SS	DAAH03-83-M-1050	1 ea $ 2,857	
22.	Power Module 6625-01-013-5160 MPN:TM504	M	Repair	Tektronix	FFP	30 Sep 81	C	DAAH03-81-F-3218 W1PLAA-1266-13BK	1 ea $ 302	
23.	Function Generator 6625-01-010-6783 MPN:FG502	M	Repair	Tektronix		Received Item 22 Nov 81	C	DAAH03-81-A-0034 W1PLAA-1275-03BN	1 ea $ 794	
24.	Temperature Measurement Device/Platinum Resistance MPN:9535	M	Temperature	Guildline Instruments	FFP	15 Dec 82	C	DAAH03-83-F-0471 W80RA6-2203-0002	1 ea $ 1,610	
25.	Current Source AC/DC MPN:2555A	M	AC/DC Difference	Valhalla Scientific	FFP	29 Dec 82	C	DAAH03-83-M-1040 W80RA6-2203-0003	2 ea $ 3,990	
26.	Voltmeter Digital 6625-00-953-8199 w/Opt 10,41,50,80,90 MPN:1071	M	Evaluation/ General	Datron Instru	FFP	11 Jan 83	SS	DAAH03-83-M-0637 W80RA6-2229-0010	2 ea $ 12,980	
27.	Signal Generator Sinewave MPN:SG504	M	Oscilloscopes	Tektronix	FFP	1 Mar 83	C	DAAH03-83-F-0800 W80RA6-2239-0015	2 ea $ 5,990	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
1.	Calibration Fixture MPN 067-0587-02 .	M	TEK 7000's	Tektronix	FFP	22 Sep 81	SS	DAAH01-81-C-B189 A11FQC07	1 ea $ 1,879	
2.	Instrument Shunt 7912323 MPN: 9711A	M	General	Guildline Instruments	FFP	13 Aug 81	SS	DAAH01-81-C-B104 A11FQB96 A11FQ982	11 ea $ 33,000	
3.	Decade Resistor MPN 1433-9719	M	General	Genrad	FFP	21 Jul 81	SS	DAAH01-81-M-A359 A11FQC08/9	6 ea $ 7,716	
4.	Resistance Standard 8579478 MPN: CR1000M	M	General	Beckman-Instruments	FFP	24 Jul 81	SS	DAAH01-81-M-A377 A11FQC45/46	2 ea $ 5,016	
5.	Plug-In Unit, Electric MPN 1805A	M	General	Hewlett-Packard	FFP	21 Sep 81	SS	DAAH01-81-C-B199 A11FQC17	3 ea $ 6,979	
6.	Differential Amplifier MIS 28706/2 MPN: 5A22N	M	General	Tektronix	FFP	28 Sep 81	SS	DAAH01-81-C-B233 A11FQ970	5 ea $ 4,537	
7.	Function Generator MIS 30526/5 MPN: FG502	M	Repair	Tektronix	FFP	28 Sep 81	SS	DAAH01-81-C-B233 A11FQA74	1 ea $ 816	
8.	Power Meter MPN: E12-432A	M	Sig Gen	Hewlett-Packard	FFP	31 Jul 81	SS	DAAH01-81-M-A355 A11FQC22-24	3 ea $ 3,814	
9.	Standard Frequency Receiver MPN: 599K	M	Counters	Tracor	FFP	12 Aug 81	SS	DAAH01-81-C-B106 A11FQC68	2 ea $ 18,400	
10.	Bridge, Capacitance MPN: 250 DER	M	Resistor/ Capacitors	ESI	FFP	21 Aug 81	SS	DAAH01-81-C-B134 A11FQC92/94	10 ea $ 19,700	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
11.	Generator Detector MPN: 801	M	Resistors	ESI	FFP	21 Aug 81	SS	DAAH01-81-C-B134 A11FQC29	1 ea $ 4,590	
12.	Power Supply MPN: 121	M	General	Elgar	FFP	18 Aug 81	SS	DAAH01-81-M-A406 A11FQ701/B34	2 ea $ 2,900	
13.	Voltage Regulator MIS-23154 Type 2 MPN: 6006B-106AC	M	General	Elgar	FFP	18 Aug 81	SS	DAAH01-81-M-A406 A11FQC63	2 ea $ 5,900	
14.	Delayed Sweep Sampler MIS-28706-5 MPN: 5S14N	M	General	Tektronix	FFP	18 Aug 81	SS	DAAH01-81-M-A388 A11FQC57	1 ea $ 4,808	
15.	Signal Generator MIS-28709 MPN: 8640B	M	General	Hewlett-Packard	FFP	12 Aug 81	SS	DAAH01-81-M-A405 A11FQC66	1 ea $ 9,571	
16.	Graphic Display System MIS-28706 MPN: F5440R3	M	General	Tektronix	FFP	28 Sep 81	SS	DAAH01-81-C-B233 A11FQC65	1 ea $ 14,356	
17.	Power Module Mainframe MPN-TM503	M	Repair	Tektronix	FFP	15 Sep 81	SS	DAAH01-81-F-A177 A11GQ-413/4 530/531	31 ea $ 8,616	
18.	Amplifier, Prec APN 7915950 MPN: 7500/RK519	M	General	Krohn-Hite	FFP	17 Nov 81	SS	DAAH01-82-M-A015 A12FQD63	1 ea $ 1,812	
19.	Power Supply MPN-HB525M20480	M	General	Kepco	FFP	18 Dec 81	SS	DAAH01-82-M-A046 A12FQD90-92	4 ea $ 5,081	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
20.	Transformer, Power APN 7910809 NSN: 6120-00-168-3705	M	General	Ridge Instrument	FFP	03 Feb 82	C	DAAH01-82-M-A037 A12FQC97	2 ea $ 1,460	
21.	Enclosure, saturated MIS 10364 MPN: 9154D/120/A	M	Std Volt	Guildline Instruments	FFP	24 May 82	SS	DAAH01-82-F-0142 A12FQE21	2 ea $ 6,166	
22.	Voltmeter, diff MPN: 887ABAN	M	General	John Fluke	FFP	24 Mar 82	SS	DAAH01-82-C-A172 A12FQE01, 04, 094 098, 099, 014	6 ea $ 30,624	
23.	Voltage Reference B MIS-10358, Type 2 NSN: 4931-00-152-2373	M	Meters/DC Voltage Stds	John Fluke	FFP	24 Mar 82	SS	DAAH01-82-C-A172 A12FQE20	1 ea $ 3,624	
24.	Detector, Null Voltmeter MPN: 845AB	M	General	John Fluke	FFP	24 Mar 82	SS	DAAH01-82-C-A172 A12FQE90	1 ea $ 1,814	
25.	Power Supply MIS 10230 MPN: 410B/AT	M	Meters	John Fluke	FFP	24 Mar 82	SS	DAAH01-82-F-0143 PRON A12FQD76, D79, D80, D73, D07, D78, D77	7 ea $ 26,670	
26.	Amplifier, Dual Trace MIS 28706/3 MPN: 5A48	M	General	Tektronix	FFP	3 Mar 82	SS	DAAH01-82-F-0065 PRON A12FQE40, E41, E39	3 ea $ 2,415	
27.	Time Base, Delaying MIS 28706/4 MPN: 5B42	M	General	Tektronix	FFP	3 Mar 82	SS	DAAH01-82-F-0065 PRON A12FQE97	1 ea $ 1,050	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
28.	Oscilloscope, Dual MIS 30526/2 MPN: SC5026D	M	Repair	Tektronix	FFP	3 Mar 82	SS	DAAH01-82-F-0065 PRON A12FQE13	1 ea $ 2,060	
29.	Multimeter Digital MIS 30526/4 MPN: DM501A	M	Repair	Tektronix	FFP	3 Mar 82	SS	DAAH01-82-F-0065 PRON A12FQE16, E17, E18	4 ea $ 2,487	
30.	Plug-In Unit MPN: PG 506	M	Oscilloscopes	Tektronix	FFP	26 Feb 82	SS	DAAH01-82-O-0966 PRON A12FQE73	2 ea	
31.	Oscilloscope Mainframe MIS 28706/1 MPN: R5440	M	General	Tektronix	FFP	3 Mar 82	SS	DAAH01-82-F-0065 PRON A12FQE59	1 ea $ 2,223	
32.	Sampler, Delayed Sweep MIS 28706/5 MPN: 5514N	M	General	Tektronix	FFP	19 Mar 82	SS	DAAH01-82-F-0107 PRON A12FQD75	1 ea $ 4,638	
33.	Graphical Display MIS 28706 Type 1 MPN: F5440R3	M	General	Tektronix	FFP	19 Mar 82	SS	DAAH01-82-F-0107 PRON A12FQE05	1 ea $ 13,752	
34.	Meter, Power MPN: E12-432A	M	Sig Gen	Hewlett-Packard	FFP	31 Mar 82	SS	DAAH01-82-F-0161 PRON A12FQD02,-3 D82,-4, D52, 024, 026	11 ea $ 13,345	
35.	Test Set, Telephone MPN: 3550B	M	Communications Systems	Hewlett-Packard	FFP	31 Mar 82	SS	DAAH01-82-F-0161 PRON A12FQE23-26, E42	13 ea $ 29,633	
36.	Generator, Signal MPN: 8640B OPTION 001	M	General	Hewlett-Packard	FFP	31 Mar 82	SS	DAAH01-82-F-0161 PRON A12FQD10	1 ea $ 8,492	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
37.	Generator, Pulse MIS 10355 TYPE 1 MPN: 214B/C38	M	General	Hewlett-Packard	FFP	31 Mar 82	SS	DAAH01-82-F-0161 PRON A12FQE02	1 ea $ 3,754	
38.	Mainframe Oscilloscope MPN: 180 OPTION C17	M	General	Hewlett-Packard	FFP	9 Apr 82	SS	DAAH01-82-P-2616 PRON A12FQE22	1 ea $ 3,009	
39.	Calibration Fixture MPN: 11715A	M	HP8901	Hewlett-Packard	FFP	31 Mar 82	SS	DAAH01-82-F-0161 PRON A12FQE64	1 ea $ 1,697	
40.	Plug-In Unit, Elec MPN: 1825A	M	General	Hewlett-Packard	FFP	9 Apr 82	SS	DAAH01-82-P-2616 PRON A12FQ027	1 ea $ 1,655	
41.	Resistance Standard APN 7910328 NSN: 6625-00-071-5343	M	General	James G. Biddle	FFP	26 Apr 82	SS	DAAH01-82-P-2917 PRON A12FQE11	1 ea $ 2,012	
42.	Analyzer, Distortion APN 7911957 MPN: 334A/C41/001	M	Sig Gen	Hewlett-Packard	FFP	30 Mar 82	SS	DAAH01-82-F-0156 PRON A12FQF30	2 ea $ 4,696	
43.	Graphical Display MIS 28706 TYPE 1 MPN: F6440R3	M	General	Tektronix	FFP	18 Mar 82	SS	DAAH01-82-F-0899 PRON A12FQF62	2 ea $ 27,505	
44.	Digital Multimeter MIS 28709D NSN: 6625-01-073-9493	M	Repair	John Fluke	FFP	2 Dec 81	SS	DAAH01-82-M-A019 PRON A12FQF54	4 ea $ 868	
45.	Plug-In Unit, Electr MPN SG 503	M	Oscilloscope	Tektronix	FFP	30 Mar 82	SS	DAAH01-82[illegible]0154 PRON A12F[illegible]60	2 ea $ 3,479	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
46.	Measurement System MIS 28754 TYPE 1 MPN: 5345A	M	General	Hewlett-Packard	FFP	8 Jun 82	SS	DAAH01-82-C-0619 PRON A12FQ002	2 ea $ 32,113	
47.	Kelvin Ratio Bridge MPN: SP 2979	M	Impedance	Electro Scientific	FFP	31 Mar 82	SS	DAAH01-82-P2474 PRON A12FQ008	1 ea $ 11,881	
48.	Voltmeter, Digital MPN: 3490A	M	General	Hewlett-Packard	FFP	12 Mar 82	LC	DAAH01-82-F-0124 PRON A12FQ103, 018	6 ea $ 22,058	
49.	Resistance Standard MPN: 8579478	M	General	Beckman	FFP	18 mar 82	SS	DAAH01-82-P-2211 PRON A12FQF12	5 ea $ 11,035	
50.	Amplifier, Differential MPN: 5A22N	M	General	Tektronix	FFP	19 Mar 82	SS	DAAH01-82-F-0139 PRON A12FQ030	2 ea $ 1,718	
51.	Amplifier, Differential MPN: 5A13	M	General	Tektronix	FFP	19 Mar 82	SS	DAAH01-82-F-0139 PRON A12FQ059, 060	2 ea $ 2,095	
52.	Plug-In Unit, Electr MPN: 1825A	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-32-P-3094 PRON A12FQ188	1 ea $ 2,019	
53.	Mainframe, Oscilloscope MPN: 180D OPTION C17	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3094 PRON A12FQD15, E32	2 ea $ 7,299	
54.	Plug-In Unit, Electr MPN: 1825A	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3094 PRON A12FQ096, D57	3 ea $ 6,061	
55.	Multimeter, Digital MIS 30526/4 MPN: DM501	M	Repair	Tektronix	FFP	31 Mar 82	SS	DAAH01-82-F-0160 PRON A12FQ050	10 ea $ 6,149	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
56.	Generator, Signal MIS 28707 TYPE I MPN: 8640B	M	General	Hewlett-Packard	FFP	25 Mar 82	SS	DAAH01-82-F-0147 PRON A12FQ012	1 ea $ 9,661	
57.	Power Supply APN: 7907346-2	M	General	NJE	FFP	29 Mar 82	SS	DAAH01-82-P-2424 PRON A12FQ054	1 ea $ 5,549	
58.	Power Supply MPN: HB525M20480	M	General	Kepco	FFP	21 Apr 82	SS	DAAH01-82-P-2823 PRON A12FQ053	1 ea $ 2,095	
59.	Power Supply MPN: 121B	M	General	Elgar	FFP	30 Mar 82	SS	DAAH01-82-P-2469 PRON A12FQ052	1 ea $ 1,520	
60.	Oscillator, Quartz MIS 10223 NSN: 4931 00 113 2942	M	Counters	Vectron Lab	FFP	26 Apr 82	SS	DAAH01-82-P-2926 PRON A12FQ034	1 ea $ 4,080	
61.	Voltmeter, Electrostatic MIS 29716 NSN: 6625 01 040 6052	M	AC Kilo volts	Electrical Instrument	FFP	24 Feb 82	SS	DAAH01-82-P-1832 PRON A12FQ062	4 ea $ 4,080	
62.	Power Supply MIS 10402 NSN: 4931 00 150 7294	M	AC/DC Difference	AUL Instruments	FFP	13 Apr 82	C	DAAH01-82-P-2461 PRON A12FQ068	1 ea $ 11,230	
63.	Amplifier, Dual Trace MIS 28706/3 MPN: 5A48	M	General	Tektronix	FFP	15 Apr 82	SS	DAAH01-82-F-0175 PRON A12FQ061	16 ea $ 13,835	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
64.	Distortion Analyzer APN 7911957 MPN: 334A	M	Sig Gen	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3105 PRON A12FQ167, 076	4 ea $ 10,375	
65.	Meter, Standing Wave APN 7910160-3 MPN: 415D	M	VSWR	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3105 PRON A12FQ078	1 ea $ 2,295	
66.	Voltage Reference B MIS 10358 TYPE 2 PN: 887AB/AN	M	Meters/DC Voltage Std	John Fluke	FFP	28 May 82	SS	DAAH01-82-C-0565 PRON A12FQ094	6 ea $ 21,090	
67.	Differential Voltmeter MPN: 887ABAN	M	General	John Fluke	FFP	28 May 82	SS	DAAH01-82-C-0565 PRON A12FQ025	1 ea $ 5,076	
68.	Calibration Kit, Tow/Cobra APN 7915981 NSN: 4931 01 003 2703	M	Tow Cobra Test Set	Small Business Administration	FFP	31 Aug 82	SS (8a)	DAAH01-82-C-A268 PRON A12FQ088, 087 089	7 ea $ 65,644	
69.	Probe, High Voltage MPN: K25-3490A	M	General	Hewlett-Packard	FFP	14 May 82	SS	DAAH01-82-P-3128 PRON A12FQ113, 114 144	5 ea $ 2,506	
70.	Oscilloscope, Dual Trace MIS 30526/2 MPN: SC 504	M	Repair	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-F-0190 PRON A12FQ134	1 ea $ 2,694	
71.	Multimeter, Digital MIS 30526/4 MPN: DM 501A	M	Repair	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-F0190 PRON A12FQ112	1 ea $ 625	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
72.	Oscillator, Test Set MPN: 204C	M		Hewlett-Packard	FFP	9 Apr 82	SS	DAAH01-82-F0159 PRON A12FQ149	1 ea $ 581	
73.	Voltmeter, true RMS MPN: 8922A/AA	M	General	John Fluke	FFP	16 Apr 82	SS	DAAH01-82-P-2562 PRON A12FQ155	1 ea $ 1,497	
74.	Resistance Standard APN 7910328 MPN: 71-631	M	General	James G. Biddle	FFP	26 Apr 82	SS	DAAH01-82-P-2917 PRON A12FQ142	3 ea $ 6,035	
75.	Plug-In Unit, Electr MPN: SG 503	M	Oscilloscope	Tektronix	FFP	22 Apr 82	SS	DAAH01-82-F-0177 PRON A12FQ140, 141	4 ea $ 6,953	
76.	Plug-In Unit, Electr MPN: SG 503	M	Oscilloscope	Tektronix	FFP	11 May 82	SS	DAAH01-82-F-0212 PRON A12FQ203	6 ea $ 10,411	
77.	Generator, Pulse MIS 10355 TYPE I MPN: HP 214B/C38/910	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3215 PRON A12FQ157	1 ea $ 3,821	
78.	Resistance Standard APN 7910328	M	General	James G. Biddle	FFP	26 Apr 82	SS	DAAH01-82-P-2917 PRON A12FQ185	1 ea $ 2,010	
79.	Power Supply MPN: 121	M	General	Elgar	FFP	14 May 82	SS	DAA01-82-P-2859 PRON A12FQ174	1 ea $ 1,470	
80.	Graphical Display System MIS 28706 TYPE I MPN: F5440R3	M	General	Tektronix	FFP	26 May 82	SS	DAAH01-82-F-0219 PRON A12FQ178	1 ea $ 13,741	
81.	Oscillator Test Set MPN: 204C	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-F-0226 PRON A12FQ159	1 ea $ 584	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
82.	Voltage Reference B MIS 10358 TYPE 2 NSN: 4931 00 152 2373	M	Meters/DC Voltage Stds	John Fluke	FFP	10 May 82	SS	DAAH01-82-P-2998 PRON A12FQ172	1 ea $ 3,551	
83.	Measurement Systems MIS 20754 TYPE 2 MPN: 5345A, 5355A, K87-59992A	M	General	Hewlett-Packard	FFP	14 May 82	SS	DAAH01-82-P-3189 PRON A12FQ150	1 ea $ 15,420	
84.	Mainframe Oscilloscope MPN: 180D OPTION C17	M	General	Hewlett-Packard	FFP	28 May 82	SS	DAAH01-82-P-3215 PRON A12FQ207	1 ea $ 3,640	
85.	Power Supply MPN: 121	M	General	Elgar	FFP	26 Apr 82	SS	DAAH01-82-P-2884 PRON A12FQ215, 233	2 ea $ 2,940	
86.	Power Supply APN 7907346-2 MPN: CS-36CR30-D2-P-SF	M	General	NJE	FFP	30 Apr 82	SS	DAAH01-82-P-3003 PRON A12FQ213	1 ea $ 5,168	
87.	Ammeter, Calibration APN 7912648 NSN: 4931 00 019 4671	M	Meters	Holt Instruments	FFP	8 Jan 82	C	DAAH01-82-P-3404 PRON A12FQE27	1 ea $ 7,412	
88.	Graphical Display System MIS 28706 TYPE 1 MPN: F5440R3	M	General	Tektronix	FFP	26 Aug 82	SS	DAAH01-82-C-0933 PRON A12FQ244	6 ea $ 94,673	
89.	Receiver, Std F MPN: 599K	M	Counter	Tracer	FFP	22 Jul 82	SS	DAAH01-82-C-0705 PRON A12FQ248	3 ea $ 28,650	
90.	Converter, MSK APN 7915949 MPN: 599-J/KMSK/N 79362-001	M	Counter	Tracer	FFP	22 Jul 82	SS	DAAH01-82-C-0705 PRON A12FQ240	3 ea $ 6,330	

NICP REPLACEMENTS

TEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
91.	Thermal Transfer St MIS 10554/2 MPN: 1600A - Mod 88	M	AC Volts	Ballantine Labs	FFP	14 May 82	SS	DAAH01-82-F-0220 PRON A12FQ257	1 ea $ 7,342	
92.	Detector, Null Voltmeter MPN: 845AB	M	General	John Fluke	FFP	30 Sep 82	SS	DAAH01-82-C-1079 PRON A12FQ252	2 ea $ 3,522	
93.	Voltmeter, Thermal MPN: 540B	M	AC Volts	John Fluke	FFP	30 Sep 82	SS	DAAH01-82-F-0367 PRON A12FQ251	1 ea $ 3,904	
94.	Oscillator, Quartz MPN: 105A OPTION 908	M	Counters	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-C-0962 PRON A12FQ249	3 ea $ 16,365	
95.	Measurement System MIS 28754 TYPE I MPN: 5345A, 5355A, K87-59992A	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-C-0962 PRON A12FQ243	7 ea $112,601	
96.	Oscillator, Audio MIS 10224 MPN: 652A/C11/910	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-C-0962 PRON A12FQ242	4 ea $ 9,965	
97.	Voltmeter APN 7911058-3 MPN: 3400A/910	M	General	Hewlett-Packard	FFP	22 Jun 82	SS	DAAH01-82-P-3804 PRON A12FQ263	3 ea $ 3,873	
98.	Filter, Variable MIS 10329 TYPE I MPN: 3202R	M	General	Krohn-Hite	FFP	14 May 82	SS	DAAH01-82-P-3109 PRON A12FQ266	1 ea $ 1,256	
99.	Time Base, Delaying MIS 28706/4 MPN: 5B42	M	General	Tektronix	FFP	28 May 82	SS	DAAH01-82-F-0210 PRON A12FQ276	1 ea $ 1,036	
100.	Resistance Standards APN 7910328 MPN: 71-631	M	General	James G. Biddle	FFP	28 May 82	SS	DAAH01-82-P-3464 PRON A12FQ283	3 ea $ 6,324	

NICP REPLACEMENTS

TEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
101.	Signal Generator MIS-28707 TYPE 1 MPN: 8640B	M	General	Hewlett-Packard	FFP	20 Jul 82	SS	DAAH01-82-P-4547 A12FQ303	2 ea $ 21,093	
102.	Analyzer, Modulation MIS-30866 TYPE 1 MPN: 1825A	M	Sig Gen	Hewlett-Packard	FFP	30 Sep 82	SS	DAAH01-82-C-1008 A12FQ339	5 ea $ 91,148	
103.	Plug-in Unit, Electrical MPN: 1825A	M	General	Krohn-Hite	FFP	20 Jul 82	SS	DAAH01-82-C-1008 A12FQ341 A12FQ340	2 ea $ 4,260	
104.	Filter, Variable MIS-10329 TYPE 1 NSN: 4931-00-178-1051	M	General	AUL Instruments	FFP	17 Aug 83	SS	DAAH01-82-P-4520 A12FQ338	2 ea $ 4,413	
105.	Power Supply MIS-10402 NSN: 4931-00-178-1051	M	AC/DC Difference	AUL Instruments	FFP	20 Sep 82	C	DAAH01-82-P-5454 A12FQ325	1 ea $ 13,950	
106.	Oscilloscope, Dual Track MIS-30526/2 MPN: SC504	M	Repair	Tektronix	FFP	12 Aug 82	SS	DAAH01-82-P-4294 A12FQ315	3 ea $ 9,104	
107.	Resistance Standard APN 7910328 NSN: 6625-00-071-5343	M	General	James Biddle	FFP	12 Jul 82	SS	DAAH01-82-P-0294 A12FQ320	2 ea $ 3,958	
108.	Mainframe, Oscilloscope MPN: 180D Option C17	M	General	Hewlett-Packard	FFP	27 Jul 82	SS	DAAH01-82-P-4559 A12FQ364	1 ea $ 3,669	
109.	Meter, Frequency Differential MPN: 527E	M	Counters	Tracor	FFP	27 Jul 82	SS	DAAH01-82-P-4477 A12FQ361	1 ea $ 4,075	

NICP REPLACEMENTS

TEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
110.	Oscillator, Test Set MPN: 204C	M	General	Hewlett-Packard	FFP	20 Jul 82	SS	DAAH01-82-P-4514 A12FQ317	1 ea $ 689	
111.	Calibration Fixture MPN: 11715A	M	HP 8901	Hewlett-Packard	FFP	20 Jul 82	SS	DAAH01-82-P-4514 A12FQ342	1 ea $ 1,961	
112.	Detector, Null Nanovolt MPN: 148 & 1506	M	Resistance	Keithley Instruments	FFP	28 Sep 82	C	DAAH01-82-P-5834 A12FQ373	1 ea $ 4,878	
113.	Power Supply, Dual MIS-30526/6 MPN: PS503A	M	Repair	Tektronix	FFP	27 Aug 82	SS	DAAH01-82-P-4880 A12FQ404	2 ea $ 1,170	
114.	Counter, Digital MIS-30526/3 MPN: DC 508A, OPT 1	M	Repair	Tektronix	FFP	27 Aug 82	SS	DAAH01-82-P-4880 A12FQ405	1 ea $ 1,884	
115.	Calibration Fixture MPN: 11715A/910/M03	M	HP 8901	Hewlett-Packard	FFP	30 Sep 82	SS	DAAH01-82-C-1046 A12FQ409	3 ea $ 5,912	
116.	Plug-in Unit, Electrical MPN: 1825A/910/M03	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-P-5425 A12FQ412	1 ea $ 2,025	
117.	Plug-in Unit, Electrical MPN: 1805A/910/M03	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-P-5425 A12FQ413	1 ea $ 3,026	
118.	Oscillator, Audio MPN: 625A/C11/910/M03	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-P-5425 A12FQ416	1 ea $ 2,491	
119.	Generator, Pulse MPN: 214B/C38/910/M03	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-P-5425 A12FQ417	1 ea $ 4,091	
120.	Generator, Signal MPN: 8640B/H66/910/M03	M	General	Hewlett-Packard	FFP	24 Sep 82	SS	DAAH01-82-P-5425 A12FQ420	1 ea $ 10,213	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
121.	Mainframe, Oscilloscope MPN: 1800/C17/910/M03	M	General	Hewlett-Packard	FFP	23 Sep 82	SS	DAAH01-82-P-5432 A12FQ397	1 ea $ 3,674	
122.	Generator, Signal MPN: 8640B/H66/910/M03	M	General	Hewlett-Packard	FFP	23 Sep 82	SS	DAAH01-82-P-5432 A12FQ454	1 ea $ 10,221	
123.	Generator, Signal MPN: 8640B/H66/C01/M03	M	General	Hewlett-Packard	FFP	23 Sep 82	SS	DAAH01-82-P-5432 A12FQ455	1 ea $ 10,546	
124.	Oscillator, Quartz MPN: 105A Option 908	M	Counters	Hewlett-Packard	FFP	16 Aug 82	SS	DAAH01-82-P-4807 A12FQ459	1 ea $ 5,090	
125.	Voltmeter, Digital w/Voltage Probe MPN: 5005/30/641	M	General	Racal-Dana Instruments	FFP	21 Oct 82	LC	DAAH01-83-F-0020 A12FQ456	6 ea $ 16,876	
126.	Oscillator, Audio MIS-10224 NSN: 6625-01-042-7415	M	General	Hewlett-Packard	FFP	20 Sep 82	SS	DAAH01-82-P-5266 A12FQ349	1 ea $ 2,479	
127.	Multimeter MPN: 3455A	M/A	Unknown (Toby)	Hewlett-Packard	FFP	20 Sep 82	SS	DAAH01-82-P-5266 A12FQ394	2 ea $ 8,569	
128.	Multimeter MPN: 3455A	M/A	Unknown (Toby)	Hewlett-Packard	FFP	26 Oct 82	SS	DAAH01-83-F-0007 A12FQ474	1 ea $ 4,105	
129.	Amplifier Differential MPN: 5A22N	M	General	Tektronix	FFP	4 Aug 82	SS	DAAH01-82-P-3816 A12FQ343	1 ea $ 1,003	
130.	Probe, High Voltage MPN: K25-3490A	M	General	Hewlett-Packard	FFP	22 Jun 82	SS	DAAH01-82-P-3818 A12FQ299 A12FQ300	10 ea $ 5,790	
131.	Meter, Frequency Difference MPN: 527E	M	Counters	Tracor	FFP	28 May 82	SS	DAAH01-82-P-3199 A12FQ238	3 ea $ 11,850	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
132.	Plug-in Unit, Electrical MPN: SG 503	M	Oscilloscopes	Tektronix	FFP	20 Jul 82	SS	DAAH01-82-P-4217 A12FQ306	3 ea $ 5,571	
133.	Analyzer, Distortion MPN: 334A/C41/001/910/M03	M	Sig Gen	Hewlett-Packard	FFP	11 Aug 82	SS	DAAH01-82-P-4551 A12FQ309	2 ea $ 5,187	
134.	Measurement System MIS-28754 TYPE 1 NSN: 4931-01-040-0121	M	General	Hewlett-Packard	FFP	11 Aug 82	SS	DAAH01-82-P-4551 A12FQ324	1 ea $ 16,050	
135.	Thermal, Transfer Standard MIS-10554/3 NSN: 4931-00-139-2710	M	AC Volts	Ballantine Labs	FFF	30 Jun 82	SS	DAAH01-82-F-0290 A12FQ327	2 ea $ 16,645	
136.	Voltmeter, Digital MPN: 5000/80 Voltage Probe 641	M	General	Racal-Dana Instruments	FFP	25 Aug 82	LC	DAAH01-82-P-5093 A12FQ326	1 ea $ 2,842	
137.	Mainframe Oscilloscope MPN: 180D	M	General	Hewlett-Packard	FFP	19 Aug 82	SS	DAAH01-82-P-4538 A11FQ072	1 ea $ 3,539	
138.	Plug-in, Video Amplifier MIS-28754/3 MPN: K87-59992A/910	M	General	Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-P-3465 A13FQ026	1 ea $ 2,470	
139.	Generator, Signal MIS-28707 TYPE 1 MPN: 8640B	M	General	Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-P-3465 A13FQ015	1 ea $ 10,847	
140.	Measurement System MIS-28754 TYPE 1 NSN: 4931-01-040-0121	M	General	Hewlett-Packard	FFP	29 Apr 83	SS	DAAH01-83-F-0247 A13FQ060	2 ea $ 31,075	
141.	Plug-in Unit MPN: 1805A	M	General	Hewlett-Packard	FFP	29 Apr 83	SS	DAAH01-83-F-0247 A13FQ058, 057	2 ea $ 5,557	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
150.	Oscilloscope, Dual 2. MIS-30526/2 MPN: SC504	M	Repair	Tektronix	FFP	21 Apr 83	SS	DAAH01-83-F-0248 A13FQ263	2 ea $ 5,799	
151.	Plug-In Unit MPN: 1825A	M	General	Hewlett-Packard	FFP	3 Mar 83	SS	DAAH01-83-F-0141 A13FQ080	1 ea $ 1,858	
152.	Analyzer, Modulation MIS-30866 TYPE 1 NSN: 6695-01-071-1720	M	Sig Gen	Hewlett-Packard	FFP	29 Sep 83	SS	DAAH01-83-C-0748 A13FQ202	1 ea $ 11,310	
153.	Meter, MIS-30525 MPN: E12-432A	M	Power	Hewlett-Packard	FFP	7 Dec 83	SS	*DAAH01-84-F-0064 A13FQ266	1 ea $ 1,385	
154.	Power Supply MPN: 1101	M	Tek P6201	Tektronix	FFP	25 Jan 83	SS	DAAH01-83-F-0104 A13FQ006	1 ea $ 522	
155.	Plug-In Unit, Electric MPN: PG 506	M	Oscilloscopes	Tektronix	FFP	4 Feb 83	SS	DAAH01-83-F-0105 A13FQ076	2 ea $ 4,486	
156.	Standard, Synchro-RE APN 7916294 MPN: DSRS-3237A	M	Synchro/	Eaton	FFP	31 May 83	SS	DAAH01-83-C-0762 A13FQ110,111	5 ea $ 59,975	
157.	Resistor, Decade MPN: 71-650	M	General	James G. Biddle	FFP	16 Mar 83	SS	DAAH01-83-P-2392 A13FQ153	2 ea $ 8,020	
158.	Bridge Capacitance MPN: 250DER	M	Impedance	Electro Scientific	FFP	28 Apr 83	SS	DAAH01-83-P-2917 A13FQ107	1 ea $ 2,390	
159.	Signal Generator, Wavetek APN 7915944 MPN: 145	M	General	Wavetek	FFP	23 Feb 83	SS	DAAH01-83-P-1903 A13FQ092, 173	2 ea $ 5,102	

* This FY 84 contract was awarded with FY 83 funds.

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
142.	Oscillator, Audio-RA MIS-10224 MPN: 652A	M	General	Hewlett-Packard	FFP	11 May 83	SS	DAAH01-83-F-0249 A13FQ012	2 ea $ 4,770	
143.	Multimeter, Digital MIS-30526/4 MPN: DM501A	M	Repair	Tektronix	FFP	23 May 83	SS	DAAH01-83-F-0184 A13FQ027-29	17 ea $ 10,835	
144.	Power Supply APN 7915935 NSN: 6130-01-033-3936	M	General	Kepco	FFP	30 Mar 83	SS	DAAH01-83-P-1790 A13FQ078, 046	2 ea $ 4,196	
145.	Resistor, Decade MIS-10264 NSN: 6625-00-133-5795	M	General	James Biddle	FFP	8 Feb 83	SS	DAAH01-83-P-1504 A13FQ010	1 ea $ 4,000	
146.	Meter, Power MIS-30525 MPN: E12-432A	M	Power	Hewlett-Packard	FFP	19 Jan 83	SS	DAAH01-83-F-0101 A13FQ013, 022	2 ea $ 2,535	
147.	Analyzer, Modulation MIS-30866 TYPE 1 MPN: 8901A	M	Sig Gen	Hewlett-Packard	FFP	11 Jan 83	SS	DAAH01-83-F-0088 A12FQ540	1 ea $ 10,925	
148.	Power Supply MIS-10230 NSN: 4931-00-115-0567	M	Meters	John Fluke	FFP	15 Aug 83	SS	DAAH01-83-P-3872 A13FQ315	1 ea $ 5,293	
149.	Voltmeter, True RMS MPN: 8922A/AA	M	General	John Fluke	FFP	15 Aug 83	SS	DAAH01-83-P-3872 A13FQ314	1 ea $ 2,125	
149a.	Meter, Power MIS-30525 MPN: 432A/E12	M	Power	Hewlett-Packard	FFP	30 Sep 83	SS	DAAH01-83-F-0468 A13FQ316	1 ea $ 1,328	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
160.	Amplifier, Precision APN 7915950 MPN: 7500 W/RK-519	M	General	Krohn-Hite	FFP	24 Mar 83	SS	DAAH01-83-P-2561 A13FQ095	1 ea $ 1,866	
161.	Precision Oscillator APN 7915951 MPN: 4100AR-8	M	General	Krohn-Hite	FFP	24 Mar 83	SS	DAAH01-83-P-2561 A13FQ086, 087	12 ea $ 19,508	
162.	Voltmeter, Thermal T MIS-10217 NSN: 6625-00-115-2582	M	AC Volts	John Fluke	FFP	11 Apr 83	SS	DAAH01-83-F-0180 A13FQ218	1 ea $ 4,004	
163.	Amplifier, Dual Trace MIS-28706/3 MPN: 5A48, Mod GC	M	General	Tektronix	FFP	31 May 83	SS	DAAH01-83-F-0323 A13FQ215	1 ea $ 950	
164.	Plug-in, Divided Amplifier MPN: K87-59992A-910-M130	M	General	Hewlett-Packard	FFP	23 Mar 83	SS	DAAH01-83-P-2430 A13FQ181	1 ea $ 2,470	
165.	Oscillator, Non-Crystal MIS-10224 MPN: 652A/C11/910	M	General	Hewlett-Packard	FFP	18 Feb 83	SS	DAAH01-83-F-0142 A13FQ034	2 ea $ 4,790	
166.	Power Supply MIS-10230 NSN: 4931-00-115-0567	M	Meters	John Fluke	FFP	26 Apr 83	SS	DAAH01-83-P-3158 A13FQ126	1 ea $ 5,016	
167.	Voltmeter, True RMS MPN: 8922/AA	M	General	John Fluke	FFP	26 Apr 83	SS	DAAH01-83-P-3158 A13FQ158,159,160	3 ea $ 7,160	
168.	Counter, Digital MIS-30526/3 MPN: DC503A, Opt 1	M	Repair	Tektronix	FFP	17 May 83	SS	DAAH01-83-F-0289 A13FQ088, 129	3 ea $ 5,289	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
169.	**Oscilloscope, Mainframe** MIS-28706/1 **MPN: R5440**	M	General	Tektronix	FFP	17 May 83	SS	DAAH01-83-F-0289 A13FQ082	1 ea $ 2,474	
170.	**Amplifier, Different** MIS-28706/2 **MPN: 5A13N**	M	General	Tektronix	FFP	17 May 83	SS	DAAH01-83-F-0289 A13FQ155	2 ea $ 2,316	
171.	**Plug-in Unit, Electric** **MPN: 1805A**	M	General	Hewlett-Packard	FFP	30 Mar 83	SS	DAAH01-83-F-0167 A13FQ141	1 ea $ 2,765	
172.	**Variable Autotransformer** **MPN: 9020F**	M	General	Ridge Instruments	FFP	18 May 83	SS	DAAH01-83-P-3584 A13FQ337	5 ea $ 3,833	
173.	**Generator, Signal** **APN 7910432**	M	Unknown (MLRS)	Baytron Systems	FFP	25 Apr 82	C	DAAH01-83-C-0534 A13FQ035,A13FQ168 A13FQ180	22 ea $ 27,720	
174.	**Voltage Reference** **MPN: 540B/AB**	M	AC Volts	John Fluke	FFP	22 Nov 82	SS	DAAH01-83-P-0737 A12FQ308	3 ea $ 12,306	
175.	**Meter Frequency** **MPN: 527E**	M	Counters	Tracon	FFP	25 May 83	SS	DAAH01-83-P-3566 A13FQ402	1 ea $ 4,885	
176.	**True RMS Voltmeter** **MPN: 8922A/AA**	M	General	John Fluke	FFP	31 Aug 83	SS	DAAH01-83-P-4264 A13FQ587	1 ea $ 2,516	
177.	**Voltmeter, Digital** **MPN: 50005/2351A/ 3490A w/Opt 060**	M	General	Racal-Dana	FFP	15 Mar 83	LC	DAAH01-83-C-0479 A13FQ014,A13FQ172 A13FQ169	11 ea $ 40,150	
178.	**Filter, Variable** **MPN: 3202R**	M	General	Krohn-Hite	FFP	30 Nov 82	SS	DAAH01-83-P-0836 A12FQ552	2 ea $ 2,628	

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR M'S	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
179.	Shunt, Instrument APN 7912323	M	General	Guildline Instruments	FFP	25 Jan 83	SS	DAAH01-83-P-1400 A12FQ544,A13FQ017 A13FQ018	6 ea $ 19,968	
180.	Power Supply APN 79159[illegible]	M	General	Kepco	FFP	26 Oct 82	SS	DAAH01-83-P-0221 A12FQ453	1 ea $ 2,095	
181.	Digital Multimeter MPN: Tek Mdl DM501A	M	Repair	Tektronix	FFP	6 Dec 82	SS	DAAH01-83-F-0047 A12FQ491,A12FQ554 A12FQ661	19 ea $ 21,089	
182.	Time Base, Delaying MPN: 5B42	M	General	Tektronix	FFP	6 Dec 82	SS	DAAH01-83-F-0047 A12FQ502	3 ea $ 3,397	
183.	Generator, Detector MPN: 801	M	Resistance	Electro Scientific	FFP	15 Nov 82	SS	DAAH01-83-P-0443 A12FQ524	1 ea $ 5,041	
184.	Oscilloscope, Dual MPN: SC504	M	Repair	Tektronix	FFP	26 Nov 82	SS	DAAH01-83-F-0044 A12FQ539	1 ea $ 2,902	
185.	Generator, Function MIS-30526/5 MPN: FG 502	M	Repair	Tektronix	FFP	26 Oct 82	SS	DAAH01-83-F-0018 A12FQ492	3 ea $ 2,479	
186.	Standard, VOR APN 7916297	M	VOR	Rockwell	FFP	21 Sep 81	SS	DAAH01-81-C-B208 A12FQ421	4 ea $ 20,428	
187.	Plug-in Unit MPN: SG 503	M	Oscilloscopes	Tektronix	FFP	30 Mar 82	SS	DAAH01-82-F-0155 A12FQ011	1 ea $ 1,742	
188.	Thermal Voltmeter MPN: 540B	M	AC Volts	John Fluke	FFP	9 Jan 84	SS	* DAAH01-84-F-0075 A13FQ611	7 ea $ 29,680	

* This FY84 contract was awarded with FY83 funds.

NICP REPLACEMENTS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
189.	Graphical Display System MIS-28706 TYPE 1 NSN: 6625-01-043-2270	M	General	Tektronix	FFP	23 Jan 84	SS	*DAAH01-84-P-1701 A13FQ287	1 ea $ 17,188	
190.	Modulation Analyzer MPN: C01-8901A	M	Sig Gen	Hewlett-Packard	FFP	14 Dec 83	SS	*DAAH01-84-C-0120 A13FQ324/5	5 ea $ 57,360	
191.	Signal Generator MIS-28707 TYPE 1 NSN: 4931-01-085-4229	M	General	Hewlett-Packard	FFP	1 Dec 83	SS	*DAAH01-84-P-0946 A13FQ275	1 ea $ 10,847	
192.	Mainframe Measurement MIS-28754/1 TYPE 1 MPN: 5345A	M	General	Hewlett-Packard	FFP	1 Dec 83	SS	*DAAH01-84-P-0946 A13FQ282	1 ea $ 7.567	
193.	Calibration Fixture MPN: 11715A	M	HP 8901A	Hewlett-Packard	FFP	11 Jan 84	SS	*DAAH01-84-F-0099 A13FQ735	1 ea $ 1,865	
194.	Power Supply MPN: 410B/AT	M	Meters	John Fluke	FFP	30 Jan 84	SS	*DAAH01-84-C-0254 A13FQ642	5 ea $ 25,930	
195.	Voltage Reference Bank MPN: 730A/AB	M	Meters/DC Voltage Stds	John Fluke	FFP	30 Jan 84	SS	*DAAH01-84-C-0254 A13FQ639	1 ea $ 4,064	

* This FY84 contract was awarded with FY 83 funds.

CUSTOMER REIMBURSABLE (MARINE CORPS, AIR FORCE, NAVY)

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
1.	Dual Trace Amplifier MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	18 Nov 81	SS	DAAH01-82-F-A002 U11FQD69,U11FQD70 U11FQD71,U11FQD72	7 ea $ 5,628	
2.	Thermal Converter MPN:11051A	M	AC Volts/ Generators	Hewlett-Packard	FFP	29 Sep 81	SS	DAAH01-81-M-A426 U11FQC61	3 ea $ 486	
3.	Dual Trace Amplifier MIS-28706-3 MPN:5A48	M	General	Tektronix	FFP	18 Aug 81	SS	DAAH01-81-M-A388 T10FQB91	2 ea $ 1,686	
4.	Calibration Fixture MPN:067-0587-02	M	Oscilloscopes	Tektronix	FFP	23 Dec 81	SS	DAAH01-82-M-A017 W81FQE87	1 ea $ 2,705	
5.	Thermal Converters MPN:11051A	M	AC Volts/ Generators	Hewlett-Packard	FFP	29 Dec 81	SS	DAAH01-82-M-A027 R11FQE98 U11FQF45	3 ea $ 480	
6.	Digital Multimeter MPN:DM501A	M	Repair	Tektronix	FFP	18 Jan 82	SS	DAAH01-82-F-A011 W81FQF15	1 ea $ 625	
7.	Amplifier, Dual Track MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	18 Dec 81	SS	DAAH01-82-F-A005 U11FQE88	3 ea $ 2,417	
8.	Thermal Converter 7913198-3 MPN:11051-A	M	AC Volts/ Generators	Hewlett-Packard	FFP	13 Oct 81	SS	DAAH01-82-M-A006 U11FQE51	1 ea $ 162	
9.	Amplifier, Dual Track MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	22 Apr 82	SS	DAAH01-82-F-0176 U10FQE93	1 ea $ 881	

CUSTOMER REIMBURSABLE (MARINE CORPS, AIR FORCE, NAVY)

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
10.	Amplifier, Dual Track MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	27 Jul 82	SS	DAAH01-82-P-3812 R11FQ092	1 ea $ 998	
11.	Dual Trace Amplifier MPN:5A48 w/MPN: GC MIS-28706/3	M	General	Tektronix	FFP	7 Feb 84	SS	* DAAH01-84-P-1519 U13FQ601	1 ea $ 1,057	
12.	Calibration Fixture MPN:067-0680-00	M	TEK 5000's	Tektronix	FFP	25 Jan 84	SS	* DAAH01-84-P-1349 T13FQ676	1 ea $ 1,936	
13.	Calibration Fixture MPN:067-0680-00	M	TEK 5000's	Tektronix	FFP	25 Jan 84	SS	* DAAH01-84-P-1349 T13FQ675	1 ea $ 1,936	
14.	Probe Assembly MPN:641	M	General	Racal Dana	FFP	1 Dec 83	SS	* DAAH01-84-P-0917 R13FQ681	1 ea $ 371	
15.	Mainframe, Power Mod Mdl RTM 506	M	Repair	Tektronix	FFP	19 Sep 83	SS	DAAH01-83-P-4921 R13FQ610	1 ea $ 681	
16.	Dual Trace Amplifier MIS-28706/3	M	General	Tektronix	FFP	21 Sep 83	SS	DAAH01-83-P-5644 U13FQ350	1 ea $ 1,079	
17.	Thermal Converter 7913198-3 MPN:1395A-04	M	AC Volts/ Generators	Ballantine Labs, Inc	FFP	29 May 82	C	DAAH01-82-F-0222 U11FQ161,U11FQ164 U11FQ163,U11FQC27	7 ea $ 2,201	
18.	Thermal Converter MPN:11051A	M	AC Volts/ Generators	Hewlett-Packard	FFP	24 Jun 82	SS	DAAH01-82-P-3806 R11FQ236,U11FQ237, R11FQ235	4 ea $ 648	
19.	Amplifier, Dual Track MPN:5A48	M	General	Tektronix	FFP	26 Aug 82	SS	DAAH01-82-P-4695 U12FQ313	1 ea $ 1,002	

* This FY 84 contract was awarded with FY 83 funds.

CUSTOMER REIMBURSABLE (MARINE CORPS, AIR FORCE, NAVY)

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
20.	Amplifier, Dual Track MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	27 Aug 82	SS	DAAH01-82-P-4961 R12FQ305	2 ea $ 2,001	
21.	Amplifier, Dual Track MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	26 Nov 82	SS	DAAH01-82-F-0021 U12FQ447,R12FQ446	6 ea $ 6,800	
22.	Audio-Pa Oscillator MIS-10224 MPN:652A	M	General	Hewlett-Packard	FFP	17 Nov 82	SS	DAAH01-83-F-0017 T12FQ429	1 ea $ 2,495	
23.	Time Base, Delaying MIS-28706/4 MPN:5B42	M	General	Tektronix	FFP	25 May 83	SS	DAAH01-83-F-0294 U12FQ724	1 ea $ 1,140	
24.	Dual Trace Amplifier MIS-28706/3 MPN:5A42	M	General	Tektronix	FFP	25 May 83	SS	DAAH01-83-F-0294 U12FQ721	1 ea $ 962	
25.	Thermal Converter APN 7913198-3 MPN:11051A	M	AC Volts/ Generators	Hewlett-Packard	FFP	9 Mar 83	C	DAAH01-83-P-2328 U11FQ681	1 ea $ 265	
26.	Digital Multimeter MIS-30526/4 MPN:DM501A	M	Repair	Tektronix	FFP	25 Jan 83	SS	DAAH01-83-F-0093 T12FQ702	1 ea $ 646	
27.	Dual Trace Amplifier MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	17 Jan 83	SS	DAAH01-83-F-0085 U12FQ664	2 ea $ 1,911	

CUSTOMER REIMBURSABLE (MARINE CORPS, AIR FORCE, NAVY)

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
28.	Dual Trace Amplifier MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	6 Apr 83	SS	DAAH01-83-F-0217 U12FQ711	1 ea $ 958	
29.	Dual Trace Amplifier MIS-28706/3 MPN:5A48	M	General	Tektronix	FFP	17 Jan 83	SS	DAAH01-83-F-0090 U12FQ512/3 U12FQ685	4 ea $ 3,828	
30.	Delaying Time Base MIS-28706/4 MPN:5B42	M	Common Gnd Equip	Tektronix	FFP	30 Apr 83	SS	DAAH01-82-F-0201 U02FC15400	8 ea $ 8,229	
31.	Thermo Converter MPN:11049A	M	Aircraft/Equip Support	Hewlett-Packard	FFP	12 Mar 82	SS	DAAH01-82-P-2135 ZZ2FC105ZZ	23 ea $ 3,760	
32.	Power Supply MPN:121BAC	M	Aircraft/Equip Support	Elgar Corp.	FFP	17 Jun 83	SS	DAAH01-82-P-3771	1 ea $ 1,510	
33.	Power Supply MPN:5A21N	M	F-16 A/B Aircraft	Tektronix	FFP	18 Mar 82	SS	DAAH01-81-F-0131 ZZ2FC104ZZ	11 ea $ 5,027	
34.	Disc Probe, Waveguide MPN:478A-H75	M	For PACER Wedge-F16A/B Aircraft	Hewlett-Packard	FFP	29 May 81	SS	DAAH01-81-F-0154 UT1FC233UT	37 ea $ 14,726	
35.	Disc Analyzer, Logic Stat MPN:1607A	M	Aircraft	Hewlett-Packard	FFP	12 Mar 82	SS	DAAH01-82-F-0128 UT2FC126UT	1 ea $ 3,536	

FMS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
1.	Oscilloscope, Plug-In MPN:SG504 w/070-2296-00	M	Oscilloscopes	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF08	80 ea $214,112	
2.	Carrying Case Mainframe MPN:TM503 w/200-1566-00	M	Provide Plug-In Input Power	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF09	80 ea $ 24,735	
3.	Function Generator MPN:FG502 w/070-1706-01	M	Repair	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF40	80 ea $ 61,033	
4.	Power Supply MPN:PS503A w/070-1834-01	M	Repair	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF42	80 ea $ 41,377	
5.	Digital Multimeter MPN:DM502A Opt 02 w/ 070-2693-00	M	Repair	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF43	80 ea $ 33,005	
6.	Digital Multimeter MIS-30526/4 MPN:DM501A	M	Repair	Tektronix	FFP	31 Mar 82	SS	DAAH01-82-F-0160 WG2FQ051	5 ea $ 3,074	
7.	Counter MPN:5335A	M	Repair	Hewlett-Packard	FFP	7 Jun 82	SS	DAAH01-82-P-3005 WG2FQ256	1 ea $ 3,572	
8.	TM Generator MPN:TG501	M	Oscilloscopes	Tektronix	FFP	11 May 82	SS	DAAH01-82-F-0203 WG2FQP15	2 ea $ 3,530	
9.	Signal Generator MPN:SG503	M	Oscilloscopes	Tektronix	FFP	11 May 82	SS	DAAH01-82-F-0203 WG2FQP16	2 ea $ 3,472	
10.	Plug-In Unit, Electrical MPN:SG503	M	Oscilloscopes	Tektronix	FFP	28 May 82	SS	DAAH01-82-F-0250 WG2FQ277	22 ea $ 37,977	

FMS

TEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
11.	Graphical Display System MIS-28706 MPN:F5440-R3	M	General	Tektronix	FFP	21 Dec 81	SS	DAAH01-82-F-A007 WG1FQD14	1 ea $ 13,752	
12.	Power Module Mainframe MPN:TM503	M	Repair	Tektronix	FFP	15 Sep 81	SS	DAAH01-81-F-A177 WG1FQB24	1 ea $ 277	
13.	Test & Measurement Equipment - FMS	M	General	Ridge	FFP	23 Oct 81	DS	DAAH01-80-C-A073 A12FQP56	1 set $ 47,736 $ 1	Lease Purchase
14.	Signal Generator MPN:SG504	M	Oscilloscopes	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-C-0547 WG2FQ083	80 ea $222,748	
15.	Digital Counter MPN:DC508A Opt 01	M	Repair	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-C-0547 WG2FQ084	80 ea $131.384	
16.	TMDE RS Mainframe MPN:TM515 Opt 06	M	Repair	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-C-0547 WG2FQ085	80 ea $ 54,015	
17.	Voltage Probe MPN:010-0277-00	M	General	Tektronix	FFP	26 Apr 82	SS	DAAH01-82-C-0547 WG2FQ102	80 ea $ 9,308	
18.	HP Modulation Analyzer MPN:8901A Opt 10, 909, and Function Generator/Synthesizer, MPN:3325A for Thailand	M	Signal Gen	Ridge Instru	FFP	30 Sep 82	DS	DAAH01-82-P-5898 WG2D0649	1 ea $ 15,569 $ 1	Lease Purchase
19.	Rental of Tektronix Equipment - Thailand	M	Oscilloscope General	Ridge Instru	FFP	16 Mar 83	DS	DAAH01-83-C-0458 WG2D0650	1 ea $ 76,704	12 Months

FMS

EM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
20.	Electrical Plug-In Unit MPN:SG503	M	Oscilloscope	Tektronix	FFP	30 Apr 82	SS	DAAH01-82-C-0566 WG1FQF02	80 ea $131,848	
21.	Resistance Standard MPN:71-631	M		Biddle	FFP	10 Feb 83	SS	DAAH01-83-F-0124 WG3FQ121	1 ea $ 2,009	
22.	Shunt, Instrument APN 7912323	M		Guildline	FFP	23 Mar 83	SS	DAAH01-83-P-2278 WG3FQ115	1 ea $ 3,313	
23.	Precision Power Supply MPN:5100-B	M		John Fluke	FFP	6 May 83	SS	DAAH01-83-F-0285 WG3FQP13	1 ea $ 9,370	
24.	Oscilloscope Calibrator MPN:6125B	M		Ballantine	FFP	24 Mar 83	SS	DAAH01-83-F-0205 WG3FQP04	1 ea $ 4,046	
25.	Digital Multimeter MPN:HP3455A/908	M		Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-F-0327 WG3FQP10	1 ea $ 4,216	
26.	Digital Multimeter MPN:HP3490A	M		Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-F-0327 WG3FQP11	1 ea $ 3,886	
27.	Digital Counter w/Converter MPN:HP5345A	M		Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-F-0327 WG3FQP12	1 ea $ 13,076	
28.	DC Power Supply MPN:H-B525M	M		Kepco Inc	FFP	23 Mar 83	SS	DAAH01-83-P-2615 WG3FQP14	1 ea $ 1,338	
29.	Plug-In, Electr MPN:SG503	M		Tektronix	FFP	25 May 83	SS	DAAH01-83-F-0294 J53FQ003	2 ea $ 3,613	
30.	Signal Generator MPN:HP204C	M		Hewlett-Packard	FFP	31 May 83	SS	DAAH01-83-F-0326 WG3FQP09	1 ea $ 676	

FMS

ITEM NO.	DESCRIPTION APN OR MIS	AUTO(A) OR MAN(M)	PRINCIPAL APPLICATION	CONTRACTOR	CONT TYPE	AWARD DATE	TYPE PROC C/SS/DS	CONTRACT/ PRON	QTY TOTAL $	REMARKS
31.	AC Voltage Standard MIS-34786, TYPE I (FMS Case TH-UWF)	M		Julie	FFP	13 Jul 83	C	DAAH01-83-C-0861 WG3FQP22	1 ea $ 13,200	
32.	AC Voltage Standard MIS-34786, TYPE II (FMS Case TW-YBP)	M		Julie	FFP	13 Jul 83	C	DAAH01-83-C-0861 WG3FQP20	2 ea $ 26,400	
33.	AC Voltage Standard MIS-34786, TYPE II (FMS Case EG-UDG)	M		Julie	FFP	13 Jul 83	C	DAAH01-83-C-0861 WG3FQP21	2 ea $ 26,400	
34.	Calibration Fixture MPN:067-0700-00	M	TEK 7D12	Tektronix	FFP	30 Jul 82	SS	DAAH03-81-A-0034	1 ea $ 202	
35.	Plug-In MPN:TG501	M	Oscilloscopes	Tektronix	FFP	24 Aug 82	SS	DAAH03-82-F-1539	1 ea $ 1,785	
36.	Calibrator Fixture MPN 067-0587-02	M	TEK 7000	Tektronix	FFP	16 Feb 84	SS	* DAAH01-84-P-2027 J53FQ027	1 ea $ 2,542	
37.	Calibration Fixture MPN:067-0587-02	M	TEK 7000	Tektronix	FFP	11 Jan 84	SS	* DAAH01-84-P-1458 J53FQ002	1 ea $ 2,539	

* This FY 84 contract was awarded with FY 83 funds.

CALIBRATION EQUIPMENT

QUESTION: When does the Army plan to provide the committee with the "final comprehensive report" and "detailed implementation plan for the acquisition of calibration equipment" required by Senate Report No. 98-292 and its predecessors?

ANSWER: The Army plans to provide to the Committee the final comprehensive acquisition implementation plan subsequent to July 1984, approximately in the September 1984 time period. The Army has provided, since 1982, interim responses to the members of the Committee. A report was provided in March 1982 dealing with the entire subject of TMDE management, a subject much broader than calibration, alone. Later in 1982, a detailed plan of action on TMDE management improvements was furnished. This "TMDE Implementation Plan" included the schedule for the series of analysis, studies and actions that directly addressed the Army's calibration and repair program. The committment to a July 1984 acquisition model completion date is TMDE Implementation Plan Item 21L, established in July 1982.

QUESTION: In January 24, 1984, letter from Jay Sculley to Chairman Stevens, your Assistant Secretary for Research, Development and Acquisition stated that a computer model "...which will form the basis of the Army's comprehensive TMDE acquisition plan to satisfy future requirements... will be completed on schedule in July 1984." Please provide a detailed explanation of the process of developing this computer model, including the following information: a narrative description of the process of developing the model, including specific identification of the officials who have approved or who will approve its design and function; a timetable with milestones for the development process; a schematic showing how the model will work; a narrative description of the program itself, including its programming language(s), and a description of all subroutines included and their purposes; a specific identification of the data bases to be accessed as inputs to the program; a detailed description of the outputs to be produced; and a specific identification of the purposes for which the output will be used and the agencies and officials (by position) who will use the output.

ANSWER: The Executive Director for TMDE in the Army approved the overall TMDE Implementation Plan in July 1982. This plan included a series of tasks leading to the final comprehensive report on the calibration and repair program as a number of discrete tests, evaluations and analyses. The Deputy Executive Director of TMDE periodically reviewed the progress of all these tasks. The use of computer modeling and simulation technique was presented to the Deputy Executive Director for TMDE in early 1983, and the concept for its development and use was approved. Since that time, progress reviews have been periodically held for the Deputy Executive Director for TMDE. The objectives and the details of the model's operation have been monitored closely by the present official serving as the Army's Deputy Executive Director of TMDE.

The computer model is a simulation of the operation of an US Army calibration and repair team. Emphasis has been placed on the realistic simulation of the performance of a team that operates in direct contact with US Army divisional or divisional support users of TMDE.

However, the model is general enough to be used in other operational scenarios. The objective of the model is to be able to demonstrate the quantitative effects on both TMDE readiness and calibration team performance if certain changes are made. Changes in equipment, methods of deploying the calibration teams, and numbers of personnel are examples of variables being analyzed. The computer model ("CALSIM") implements the basic organizational actions and interaction of calibration and repair. The flow of TMDE is basically controlled by equipment available for calibration and repair, by personnel available and by work space available. The work flow is complicated as appropriate by activities such as: preparation to travel and setup at new site for mobile organizations, periodic recertification of calibration standards and duties other than calibration and repair. Figure Number 1, which follows, shows the CALSIM Model. Beginning with the customer, items are submitted through production control to a holding area either for repair or calibration. Items sent to the repair function have wait times for supply action as well as a hold area for parts. Items sent to the calibration function are given an initial operations check followed by calibration. The proper relationships between calibration and repair are used. Finally, items are returned to the customer.

The major milestones for this effort prior to November 1983 included:

a.	Model Initiation	Feb 83
b.	Field Visits	July 83
c.	Detailed Programming	Aug-Nov 83

A current milestone chart for the remaining effort follows as Figure Number 2.

The computer model is written using the GASP II simulation language. Site or area base line input data of onboard personnel and either actual or representative TMDE calibration and repair workload is used. Other input data include calibration time, repair time, mean time to failure, repair rates, number of work stations. Input data and files used in the model include: TMDE recall files, TB 43-180 (the basic requirements document for the Army in the field), generic codes for all Army TMDE, header file which includes all makes, NSN's and models by customers (approximately 58,000 lines), Procedures Application List (PAL) which lists calibration standards required for each technical bulletin (each technical bulletin covers basically one model of TMDE and similar items), additions to the PAL file for items not in TB 43-180, lists of equipment in the AN/GSM 286 and 287, as well as data on equipment costs, personnel, personnel costs and geographic data. These data are used as appropriate to the question under consideration. Figure Number 3 shows the data input and basic analysis plan.

The use of the model is controlled by the optimization process. This process is basically to use existing data, studies and regulations to analyze support options. Analysis of cause and effect output products are used to drive and steer the analysis process. (Refer to Figure Number 4.)

The computer model will be used to analyze alternatives and select the best direction for future calibration and repair operations and procurements. The outputs to be produced include the number of man-hours expended calibrating, repairing each major category of TMDE. The model will also predict the mean and fluctuations in the turnaround time provided to the owning unit as well as readiness or availability rates. Quantity of personnel and equipment are also expected results from use of this model. These alternatives and recommendations will be documented in a comprehensive report to be provided to the Committee and will include an acquisition plan. DARCOM and the Deputy Executive Director of TMDE will be the principal agency and official who will use the output and make judgements in this matter. Coordination with the Army staff and headquarters will also be made.

Figure # 1

CALSIM MODEL

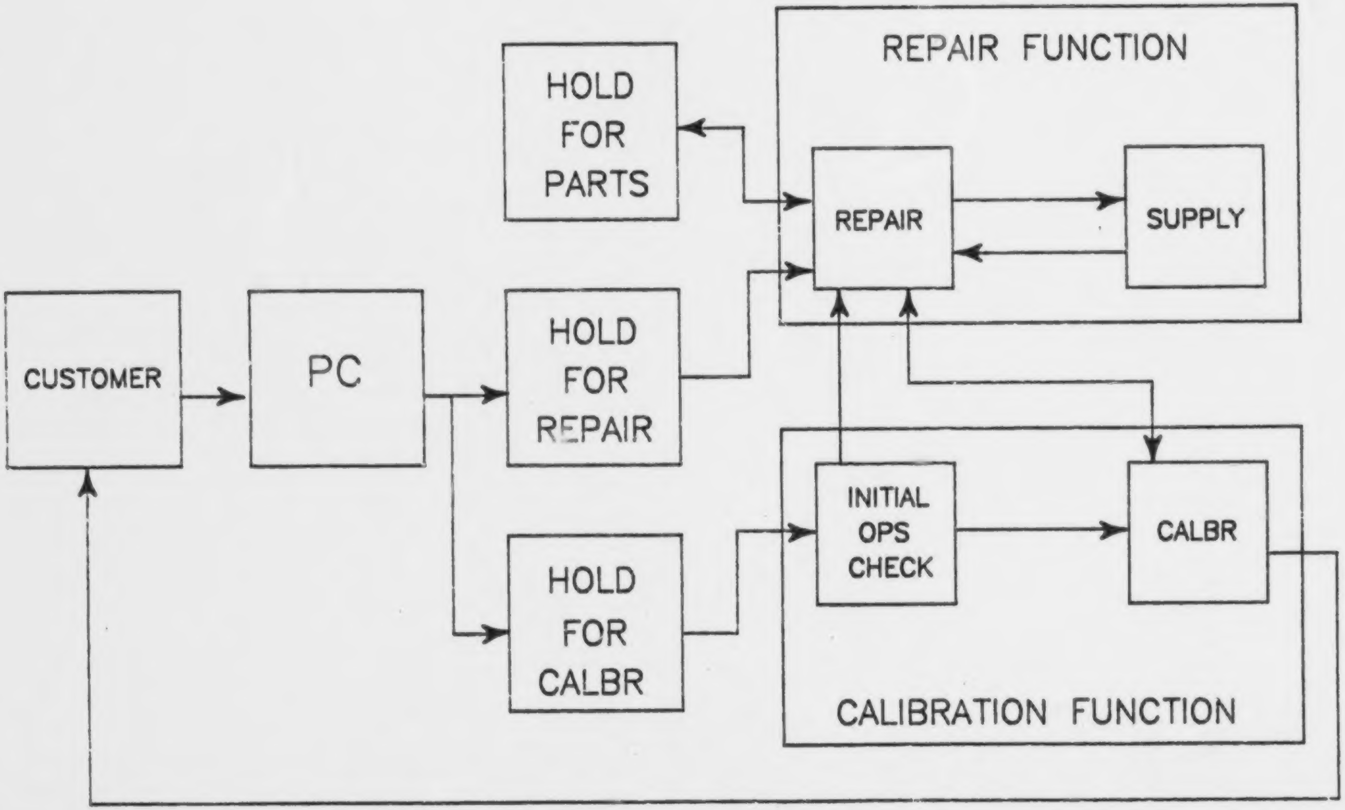

HOLD FOR PARTS
REPAIR FUNCTION
REPAIR
SUPPLY
CUSTOMER
PC
HOLD FOR REPAIR
HOLD FOR CALBR
INITIAL OPS CHECK
CALBR
CALIBRATION FUNCTION

Figure # 2

MILESTONE CHART

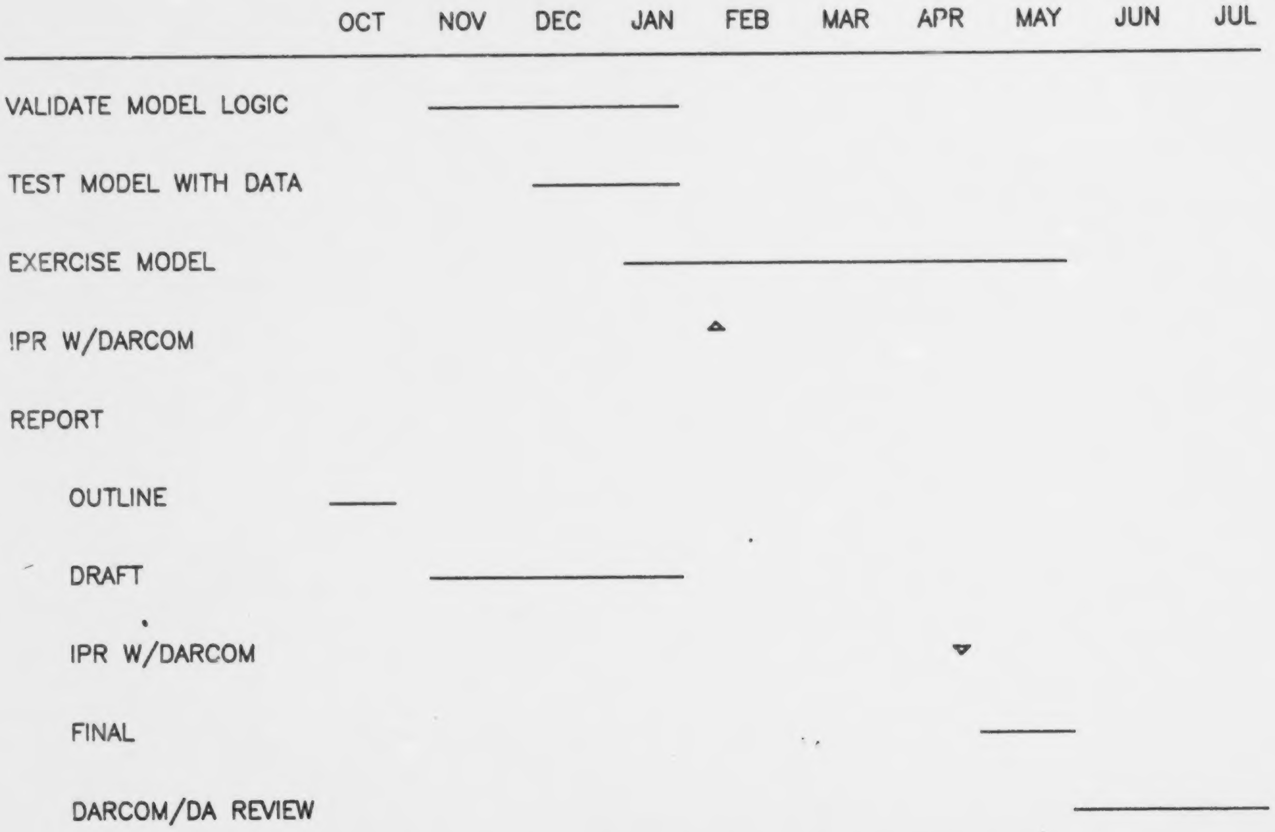
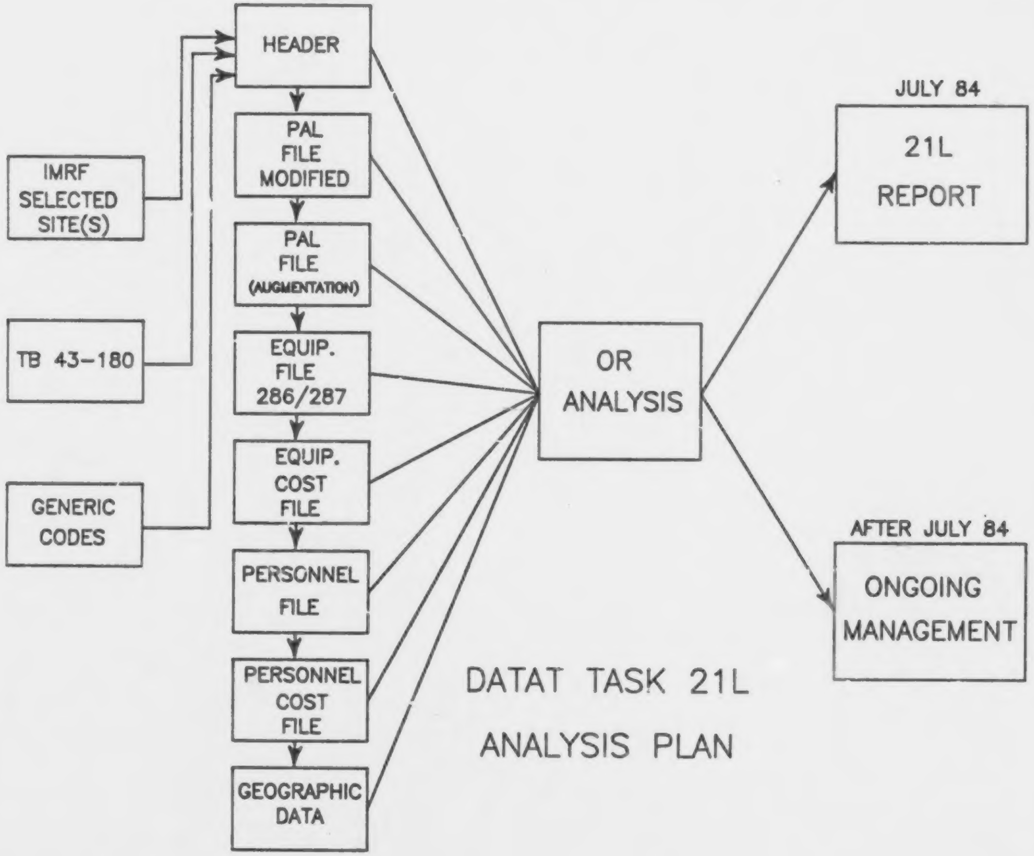


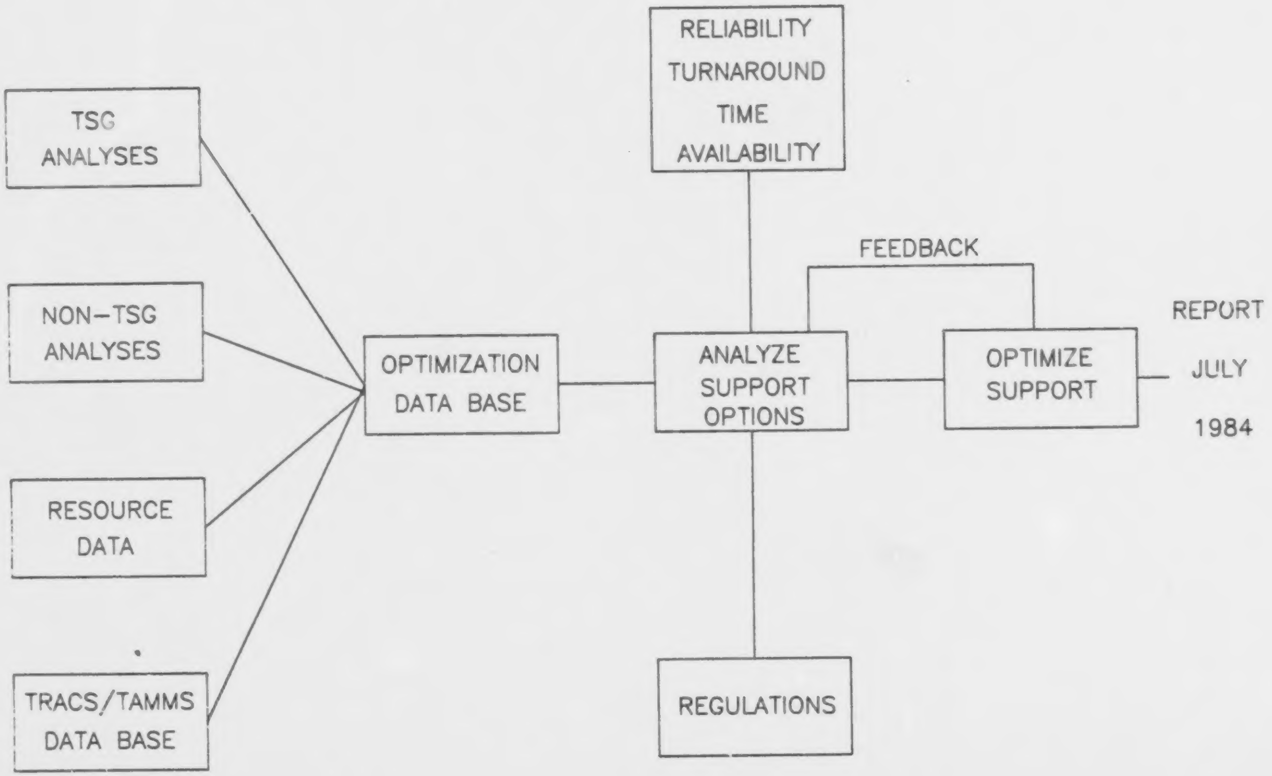
Figure # 3


HEADER
IMRF SELECTED SITE(S)
TB 43-180
GENERIC CODES
PAL FILE MODIFIED
PAL FILE (AUGMENTATION)
EQUIP. FILE 286/287
EQUIP. COST FILE
PERSONNEL FILE
PERSONNEL COST FILE
GEOGRAPHIC DATA
OR ANALYSIS
JULY 84
21L REPORT
AFTER JULY 84
ONGOING MANAGEMENT

DATAT TASK 21L
ANALYSIS PLAN

Figure # 4

OPTIMIZATION PROCESS


TSG ANALYSES
NON–TSG ANALYSES
RESOURCE DATA
TRACS/TAMMS DATA BASE
OPTIMIZATION DATA BASE
RELIABILITY TURNAROUND TIME AVAILABILITY
ANALYZE SUPPORT OPTIONS
REGULATIONS
FEEDBACK
OPTIMIZE SUPPORT
REPORT JULY 1984

CALIBRATION EQUIPMENT

QUESTION: As part of the input for the computer model discussed in the question preceding, what performance and cost data does the Army plan to use to establish the cost effectiveness of the various types of calibration equipment now in the Army inventory? How does the Army plan to acquire this data on equipment not now in the Army inventory?

ANSWER: All available performance data will be used to conduct this analysis. Combat readiness of the force structure is and must be the primary concern of the Army. Cost effectiveness must be evaluated in this context. Readiness of the force structure through TMDE availability and accuracy in the hands of the using unit must be our main concern. Cost comparisons of solutions providing equivalent levels of availability and quality will be made. Data will be used from the performance of automatic calibration equipment at White Sands Missile Range, the six JRL LOCOST 106 systems in use in the six depots, "Buy-One and Test" Automated Meter Calibrator Program, and a special test of oscilloscope, signal generator, and counters. The extensive Army data base on nearly 500,000 pieces of TMDE will also be included in the study. Cost data will be used from actual past and current quotations or awarded contracts for calibration equipment. Where such cost data is not available, manufacturers' catalog prices may be used, as well as additional requests for quotations if needed.

QUESTION: ~~The Army~~ now has a number of Julie Laboratories, Inc. automated calibration systems in use in its facilities. Please provide the committee with any data you may have gathered so far on the performance of this equipment.

ANSWER: Julie Research Laboratories, Incorporated has delivered eight LOCOST 106 systems to the Army since 1981. The Army has accepted seven of the systems as of 23 February 1984. Two of the systems are located at White Sands Missile Range, New Mexiso and the remaining six at Army depots where sizeable numbers of direct current, low frequency (DC/LF) calibrations are performed annually. The system which has yet to be accepted, although delivered in March 1983, twice failed the acceptance test. JRL is currently repairing/modifying a component of that system prior to retesting.

The following report entitled, "Julie Research Laboratories, Inc., LOCOST 106 Automated Calibration System Evaluation", prepared by White Sands Missile Range is their evaluation of one of the two LOCOST 106 systems from 1 August 1981 through 30 July 1983. The second system is utilized for a special application (standards maintenance) and not included in the study.

The next document, "Utilization Evaluation and Review Analysis Report - JRL LOCOST 106 System", prepared by Headquarters, DARCOM is an evaluation of the performance of the six systems since their delivery and acceptance through 31 December 1983. It contains site by site monthly production as well as availability and utilization data.

JULIE RESEARCH LABORATORIES INC.
LOCOST 106 AUTOMATED
CALIBRATION SYSTEM EVALUATION

BY

H.F. GONZALEZ

ABSTRACT

A Julie Research Laboratories Inc. (JRL) LOCOST 106 Automated Meter Calibration System has been in production at the Calibration Laboratory, White Sands Missile Range (WSMR), New Mexico since April 1981.

The JRL LOCOST 106's performance was evaluated under WSMR's normal operational environment and workload from 1 August 1981 through 30 July 1983.

Results of this evaluation illustrates the JRL LOCOST 106's performance is consistent with the predictions concluded by the initial evaluation.

I. INTRODUCTION:

A Julie Research Laboratories Inc. (JRL) LOCOST 106 was evaluated by the Calibration Laboratory, White Sands Missile Range (WSMR), New Mexico for a 90 day period, 1 April 1981 through 30 June 1981. Reference Julie Research Laboratories (JRL)LOCOST 106 Automated Calibration System Evaluation by H.F. Gonzalez, 29 July 1981. The evaluation period was extended from 1 August 1981 through 31 July 1983 to further examine the JRL LOCOST 106's performance.

II. DESCRIPTION OF TEST:

Meter calibration with the JRL LOCOST 106 in-place, and mobile calibration vans were performed under WSMR's normal operational environment and workload by calibration contractor personnel (RCA). During the evaluation period thru-put, runtime, administrative (paperwork), downtime due to system failure, system self check, and calibration were recorded. A summary of the results are shown in Figure 1.

III. WORKLOAD FLOW:

The workload flow diagram shown in Figure 2 shows the flow of Test, Measuring, and Diagnostic Equipment (TMDE) through the automated and manual calibration/repair work stations.

TMDE that can be accommodated by the JRL LOCOST 106 and are calibrated by other means are:

a. The TMDE located at remote sites that are more cost effectively serviced by mobile calibration vans.

b. The TMDE serviced by the in-place calibration team.

c. Instrument impatience. (Normal priority is first-in first-out. An impatient instrument is one that cannot be serviced in time with that order. It is then referred to an alternate queue which is shorter).

IV. SERVICE TIME COMPARISON:

A comparison of service time is shown in Figure 3.

V. COST SAVINGS:

An Economic Analysis in accordance with AR 11-28 was prepared for the Manual method and the JRL LOCOST 106 (See Appendix A).

A Cost Analysis is shown in Appendix B.

VI. MAINTENANCE AND CALIBRATION

The JRL LOCOST 106 was down during the evaluation period for 110.7 hours; 62.7 hours for repair, and 48 hours for self check and calibration. (See Appendix C)

VII. CONCLUSIONS:

The JRL LOCOST 106's performance was found to be consistent with predictions concluded by the initial evaluation.

The in-place calibrations have a slightly longer service time, but improve public relations, reduce instrument turnaround time to 0 days, and are cost effective for other TMDE, i.e. oscilloscopes, signal generators, oscillators, and spectrum analyzers.

The mobile calibration vans have longer service times but reduce instrument turnaround time to 0 days, and eliminate the cost of transporting TMDE to the main Calibration Laboratory.

METHODS UTILIZED FOR METER CALIBRATION:

Equip & Pd	# Calbr a.	x	Avg Time Time/Calbr b.	=	Total Hours	x	Labor Rate c.	=	Total Cost	+	Anl Maint d.	=	Total Cost of Op	÷	Cost Per Calbr
JRL 106															
8/81-12/81	775		0.45		348.75		$16.18		$ 5643		$2161.79		$ 7804.79		$10.07
1/82-12/82	2130		0.45		958.5		17.65		16918		3663.22		20581.20		9.66
1/83-7/83	1424		0.45		640.8		18.10		11598		1142.92		12740.92		8.95
IN-PLACE CALIBRATION															
8/81-12/81	303		0.706		213.92		16.18		3461		125		3586		11.83
1/82-12/82	673		0.706		475.14		17.65		8386		300		8685		12.90
1/83-7/83	374		0.706		264.1		18.10		4780		175		4955		13.25
CALIBRATION VAN*															
8/81-12/81	50		1.555		77.75		16.18		1258		625		1883		37.66
1/82-12/82	136		1.555		211.48		17.65		3733		1500		5233		38.48
1/83-7/83	97		1.555		150.84		18.10		2730		875		3605		37.16

a. Number of calibration performed during period.

b. Time from data base and RCA Contractor logs

c. Direct labor rate (Comptrollers Handbook)

d. Annual maintenance performed

* WSMR has three (3) calibration vans in operation, data shown is for one (1) van.

Figure 1

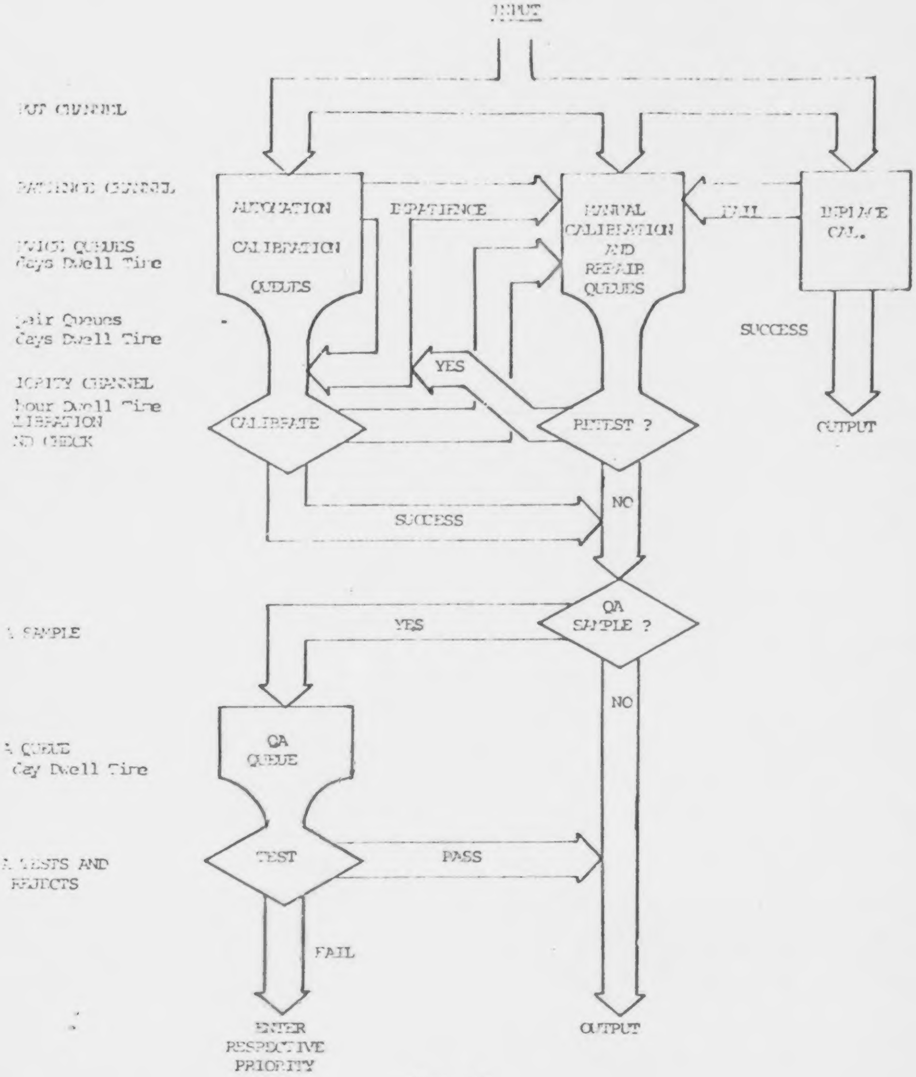

INPUT
PUT CHANNEL
PATIENCE CHANNEL
VICE QUEUES
days Dwell Time
pair Queues
days Dwell Time
IORITY CHANNEL
hour Dwell Time
LIBRATION
ND CHECK
AUTOMATION
CALIBRATION
QUEUES
IMPATIENCE
MANUAL
CALIBRATION
AND
REPAIR
QUEUES
FAIL
REPLACE
CAL.
SUCCESS
OUTPUT
YES
CALIBRATE
RETEST ?
NO
SUCCESS
SAMPLE
QA
SAMPLE ?
YES
NO
A QUEUE
day Dwell Time
QA
QUEUE
A TESTS AND
REJECTS
TEST
PASS
FAIL
ENTER
RESPECTIVE
PRIORITY
CHANNEL
OUTPUT

Figure 2

SERVICE TIME COMPARISON

	Manual Calbr (a)	JRL LOCOST 106	In-Place Calbr	Mobile Calbr Vans (b)
# Calibrations		4329	1350	283
# Hours		1878.4	953.4	440.1
Avg Hrs/Calbr	1.3	0.45	0.706	1.555

(a) Time taken from data base

(b) Data shown is for one (1) van

Figure 3

Meter Calibration Production

Date	JRL-106 Production	In-Place Production	Calib. Van Production (a)
Aug 81	195	43	17
Sep 81	80	60	18
Oct 81	114	88	2
Nov 81	206	83	7
Dec 81	180	29	6
Jan 82	170	38	7
Feb 82	181	54	8
Mar 82	140	54	15
Apr 82	174	68	8
May 82	162	91	14
Jun 82	228	33	5
Jul 82	187	62	12
Aug 82	131	48	15
Sep 82	219	79	11
Oct 82	169	78	21
Nov 82	217	23	6
Dec 82	152	45	12
Jan 83	187	55	12
Feb 83	214	39	10
Mar 83	188	65	18
Apr 83	246	103	10
May 83	220	30	16
Jun 83	156	39	15
Jul 83	213	52	16

a) Data shown is for one (1) van

Figure 4

MANUAL SYSTEM

```
                         ECONOMIC ANALYSIS

                             AR-11-28

--------------------------------------------------------------------------------
Yr   Nonrecurring    Recurring    Annual     Discount    Discounted
     Investment      Operations   Costs      Factor      Annual
                                                           Cost
--------------------------------------------------------------------------------

1     123500          50219        173719      .954      165727.926
2     0               50219        50219       .867      43539.873
3     0               55257        55257       .788      43542.516
4     0               55257        55257       .717      39619.269
5     0               55257        55257       .652      36027.564
6     0               55257        55257       .592      32712.144
7     0               55357        55357       .538      29782.066
8     0               55257        55257       .489      27020.673

      123500          432080       555580      5.597     417972.031


Total Project Cost (Discounted)  417972.031

Uniform Annual Cost (Without Terminal Value)  74677.8686796

Less Terminal Value (Discounted)  0

Net Total Project Cost (Discounted)  417972.031

Uniform Annual Cost (With Terminal Value)  74677.8686796
```

JRL LOCOST 106

```
                         ECONOMIC ANALYSIS

                             AR-11-28

--------------------------------------------------------------------------------
Yr   Nonrecurring    Recurring    Annual     Discount    Discounted
     Investment      Operations   Costs      Factor      Annual
                                                           Cost
--------------------------------------------------------------------------------

1     173600          16635        190235      .954      181484.19
2     0               16635        16635       .867      14422.545
3     0               18383        18383       .788      14485.804
4     0               18383        18383       .717      13180.611
5     0               18383        18383       .652      11985.716
6     0               18383        18383       .592      10882.736
7     0               18383        18383       .538      9890.054
8     0               18383        18383       .489      8989.287

      173600          143568       317168      5.597     265320.943


Total Project Cost (Discounted)  265320.943

Uniform Annual Cost (Without Terminal Value)  47404.1348937

Less Terminal Value (Discounted)  0

Net Total Project Cost (Discounted)  265320.943

Uniform Annual Cost (With Terminal Value)  47404.1348937
```

ECONOMIC ANALYSIS--DOD INVESTMENTS
SUMMARY OF PROJECT COSTS
FORMAT A-1

1. Submitting DoD Component: ______
2. Date of Submission: ______
3. Project Title: Meter Calibration
4. Description of Project Objective: ______
5a. Present Alternative: Manual 6a. Economic Life: ∞
b. Proposed Alternative: JRL 106 b. Economic Life: 8 years

7	8 Recurring (Operations) Costs		9	10	11
Project Year	a Present Alternative	b Proposed Alternative	Differential Cost •	Discount Factor	Discounted Differential Cost
1	50219	16635	33584	.954	32039
2	50219	16635	33584	.867	29117
3	55257	18383	36874	.788	29057
4	55257	18383	36874	.717	26439
5	55257	18383	36874	.652	24042
6	55257	18383	36874	.592	21829
7	55257	18383	36874	.538	19838
8	55257	18383	36874	.489	18031
12. TOTALS			288412	5.597	200398

13. Present Value of New Investment:
   a. Land and Buildings ______
   b. Equipment ______
   c. Other (identify nature) ______
   d. Working Capital (Change—plus or minus) ______

14. Total Present Value of New Investment 173600

15. Less: Present Value of existing assets replaced ______

16. Plus: Value of existing assets to be employed on the project ______

17. Net Investment (Line 14 minus line 15 plus line 16) $ 173600

18. Present Value of Cost Savings from Operations (Col. 11) 200398

19. Plus: Present Value of the Cost of Refurbishment or Modification Eliminated ______

20. Total Present Value of Cost Savings $ 200398

21. Savings/Investment Ratio (Payback) (Line 20 ÷ Line 17) 1.15

SUMMARY OF COSTS FOR ECONOMIC ANALYSIS/
PROGRAM EVALUATION STUDIES
FORMAT A-1

13. Present Value of New Investment:	
a. Land and Buildings	0
b. Equipment	173,600
c. Other (identify nature)	0
d. Working Capital (Change-plus or minus)	0
14. Total Present Value of New Investment (i.e., Funding Requirements).	173,600
15. Plus: Value of existing assets to be employed on the project	0
16. Less: Value of existing assets replaced	0
17. Less: Discounted Terminal Value of new investment	0
18. Total New Present Value of Investment	$ 173,600
19. Present Value of Cost Savings from Operations (Col. 11)	200,398
20. Plus: Present Value of the Cost of Refurbishment or Modifications Eliminated	0
21. Total Present Value of Savings	$ 200,398

22. Savings/Investment Ratio
(Line 21 divided by Line 18) 1.15

23. Rate of Return on Investment ≅ 13%

Calibration:

	Manual Method
Annual cost of operation:	$55257
Annual cost of operation of JRL-106 compared to Manual Method:	$22108
Additional cost saving from repair diagnostics: ** 0.3 hrs/repair x 30% of 2165=650 x.3 = 195 x 19.10	-3725
	$18383
Annual Cost Savings:	$36874

Breakdown of above figures:

Equip	# Calbr a.	x	Avg Time Time/Calbr b.	=	Total Hours	x	Labor Rate c.	=	Total Cost	+	Annual Maint d.	=	Total Cost of Operation
Manual	2165		1.3		2814.5		$19.10		$53757		$1500		$55257
JRL-106*	2165		0.45		974.25		19.10		18603		3500		22108

a. Number of calibrations performed/year

b. Time from data base & RCA Contractor logs

c. Direct labor rate (Comptroller Handbook)

d. Annual Maintenance performed

* 53.7% utilization
** Derived from data base

JRL LOCOST 106 MAINTENANCE AND CALIBRATION RECORD

DATE	REPAIR Hours	CALIBRATION Hours
Aug 81		
Sep 81		
Oct 81	16.0	12.0
Nov 81	3.4	
Dec 81	8.0	
Jan 82		
Feb 82		
Mar 82	12.0	
Apr 82		12.0
May 82	8.0	
Jun 82		
Jul 82		
Aug 82	12.0	
Sep 82	1.0	
Oct 82		12.0
Nov 82	1.0	
Dec 82	1.3	
Jan 83		
Feb 83		
Mar 83		
Apr 83		12.0
May 83		
Jun 83		
Jul 83		
TOTALS	62.7	48.0

MAINTENANCE AND CALIBRATION COSTS FOR "JRL 106"

Time Period August 1981 - December 1981

Number of Hours to Repair/Calibrate	39.4
Direct Labor ($16.18) $16.18 x 39.4 hrs	$637.49
Overhead (55%)	350.62
Loaded Labor	988.11
Parts, Shipping, & Handling (Instrs)	275.00
G&A (15%) (on labor and parts)	189.47
SUB TOTAL	1452.58
Profit (10%)	145.26
SUB TOTAL	1597.84
Taxes (45)	63.91
SUB TOTAL	1661.75
Maintenance for HP 9835 computer	500.00
TOTAL Maintenance Cost for "JRL 106"	2161.75

Time Period January 1982 - December 1982

Number of Hours to Repair/Calibrate	59.3
Direct Labor ($17.65) $17.65 x 59.3 hrs	$1046.65
Overhead (55%)	575.66
Loaded Labor	1622.31
Parts, Shipping, & Handling (Instrs)	250.00
G&A (15%) (on labor and parts)	280.85
SUB TOTAL	2153.16
Profit (10%)	215.32
SUB TOTAL	2368.48
Taxes (4%)	94.74
SUB TOTAL	2463.22
Maintenance for HP 9835 computer	1200.00
TOTAL Maintenance Cost for "JRL 106"	3663.22

MAINTENANCE AND CALIBRATION COSTS FOR "JRL 106"

Time Period January 1983 - July 1983

Number of Hours to Repair/Calibrate	12
Direct Labor ($18.10) $18.10 x 12 hrs	$217.20
Overhead (55%)	119.46
Loaded Labor	336.66
Parts, Shipping, & Handling (Instrs)	0
G&A (15%) (on labor and parts)	50.50
SUB TOTAL	387.16
Profit (10%)	38.72
SUB TOTAL	425.88
Taxes (4%)	17.04
SUB TOTAL	442.92
Maintenance for HP 9835 computer	700.00
TOTAL Maintenance Cost for "JRL 106"	1142.92

METER CALIBRATION PRODUCTION

DATE	JRL-106 PRODUCTION
AUG 83	171
SEP 83	164
OCT 83	252
NOV 83	253
DEC 83	206
TOTAL	5375

JRL LOCOST 106 MAINTENANCE AND CALIBRATION RECORD

DATE	REPAIR HOURS	CALIBRATION HOURS
AUG 83		
SEP 83		
OCT 83		
NOV 83	0.5	12.0
DEC 83		
TOTALS	63.2	60.0

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND
5001 EISENHOWER AVENUE. ALEXANDRIA. VA 22333

DRCTM

24 February 1984

MEMORANDUM FOR RECORD

SUBJECT: Utilization Evaluation and Review Analysis Report - JRL LOCOST 106 System

1. Reference the JRL LOCOST 106 System Test Plan, Management Utilization Plan, April 12, 1983.

2. In accordance with the reference above, an analysis of each of the six sites was prepared, see Enclosures 1 through 6. The availability rates and cost savings or losses cover the period from each system acceptance through December 31, 1983. Additional information through a part of February 1984 concerning component failures, returns to JRL, and repair actions has also been included; although it is not included in the availability rates. Enclosure 7, a graphic portrayal of the systems availability rates since acceptance, depicts that the average availability rate has been 49 percent. The percentage does not include Letterkenny Army Depot (LEAD), as that system has yet to be accepted.

3. Major problems have been experienced at all sites except for Red River Army Depot (RRAD). Failures have for the most part been with the AC 129 (voltage standard), PA 225 (power supply), PRS 106 (resistance standard), and the DM 1060 (digital voltage meter). Mr. Julie has stated that "infant mortality" should be expected in the first 90 days. He has lately stated that failures beyond 90 days up to 6 months are due to "break in period" failures. Hopefully the availability rate will reach 95 percent, as JRL claims; but when remains the question.

4. The analysis of all sites including Letterkenny Army Depot (LEAD) indicates a net loss to the Army of approximately $18,850 through December 31, 1983. This figure was developed with the application of a 10 percent interest rate on the money paid JRL, minus the experienced productivity. The best production periods at Tobyhanna Army Depot (TOAD) and Red River Army Depot (RRAD), indicates that the amortizaiton periods will be greater than 7 to 8 years. The JRL advertised 3 year or less amortization for workloads like Tobyhanna Army Depot (TOAD) has not been borne out by actual experience.

5. The performance of the systems, when opertional, has demonstrated that calibration times are reduced approximately 50 percent with the application of automation, as was observed in the "Buy-One and Test". However, due to the extremely low availability rates, the anticipated cost savings have not been realized. The LOCOST 106, as is true with other automated systems, requires manual augmentation for some ranges. Enclosures 8 through 11 depict the augmentation at four of the sites. In summary, the LOCOST 106 systems have yielded low availability rates, but when operable, the systems produce satisfactory results in terms of operating speeds. However, even with satisfactory operating speeds, the amortization periods will extend the estimates suggested by the manufacturer.

Michael C Sandusky

11 Enclosures
as

MICHAEL C. SANDUSKY
Deputy Executive Director
of Test, Measurement, and
Diagnostic Equipment

JRL LOCOST 106

SYSTEM EXPERIENCE

TOBYHANNA ARMY DEPOT (TOAD)

1. DELIVERY, ACCEPTANCE, AND PAYMENT.

The system was delivered on 28 March 1983. Under a special payment provision approved by SARDA at JRL's request, 95 percent of $133,000 was paid to JRL prior to the acceptance of the system. As a result of contract definitization and modification, JRL was to install and turn-key the system on 29 July 1983. JRL installed and "turn-keyed" the system on 27 July 1983 at which time the Army accepted the system. On 25 August 1983, DCASR, NY paid JRL the remaining 5 percent of the cost of the system or $7,120.

2. PROBLEMS AND FAILURES.

A significant number of problems and failures have been experienced with the JRL LOCOST 106 system at TOAD. They are;

a. The AC 129 (AC current standard) failed 6 September 1983 and was repaired by JRL on 12 September 1983.

b. The DM 1060 (digital voltmeter) failed 6 October 1983 and was repaired and returned by JRL on 25 October 1983.

c. The DM 1060 (digital multimeter) again failed on 1 November 1983 and was repaired and returned by JRL on 9 November 1983.

d. The AC 129 (AC current standard) and DM 1060 (digital voltmeter) both again failed on 1 December 1983. The AC 129 was repaired and returned to TOAD on 9 December 1983. The DM 1060 was repaired and returned by JRL on 11 Janauary 1984.

e. The PRS 106 (resistance standard) failed on 14 December 1983 and was repaired by JRL and returned to TOAD on 29 December 1983.

f. The PRS 106 again failed on 20 January 1984. JRL shipped a replacement PCB to TOAD. However, this did not correct the problem. Two additional PCB's were provided to TOAD on 25 Janaury 1984; these too did solve the problem. TOAD exercised the relays using a special program and this solved the problem.

g. The PRS 106 failed again on 1 February 1984 and was repaired and returned to TOAD on 6 February 1984.

3. PRODUCTIVITY.

a. AUGUST 1983 -

(1) Summary

(a)	Gross hours of machine availability	184
(b)	System Downtime:	
	Programming	(55)

Troubleshooting (16)

System Familiarization* (40)

(c) Net available time 73

(d) Administrative time (training) -(24)

(e) Productive hours available 49
(f) Hours used in calibration 36
(g) Productive utilization rate 73%
(h) Overall utilization rate 19.6%
(2) Items calibrated and times expended:

Model	MFG	Total Cals	Manual Ave M/H	Julie Ave M/H
TS352	JAN	10	0.81	0.67
8000A	Fluke	22	1.27	0.5
168	Keithley	28	1.25	0.6
177	Keithley	1	1.43	0.5
260XLPM	Simpson	1	0.7	1.0

*The week of 1-5 August 1983, was used by Tobyhanna personnel to get hands on experience operating, calibrating, and programming the system in a non-productive mode. The system was put on-line in a productive mode on 8 August 1983.

b. SEPTEMBER 1983 -

(1) Summary

(a) Gross hours of machine availability 168

(b) System Downtime

Troubleshooting (12)

Programming (28)

System inoperative components returned to JRL (40)

(c) Net available time 88

(d) Administrative time/training 0

(e) Productive hours available 88
(f) Hours used in calibration 77
(g) Productive utilization rate 87.5%
(h) Overall utilization rate 45.8%
(2) Items calibrated and times expended*

Model Number	Total Cals	Previous Ave M/H	Julie Ave M/H*
Simpson 260-XLPM	4	0.70	0.45
Simpson 464	19	1.21	0.67
Fluke 8000	9	1.27	0.60
Fluke 8020	7	1.06	0.3
Fluke 8050	7	1.13	0.47

Fluke 8100	3	1.73	1.00
Fluke 8600	1	1.18	1.40
Keithley 168	43	1.25	0.65
Keithley 177	1	1.43	0.5
Valhalla 4440	4	0.92	0.58
Valhalla TS352	38	0.81	0.44

*Data may be atypical because the system operators recognized that the LOCOST 106 is a high interest system and operators were competing for a vacant higher level position.

c. OCTOBER 1983 -

(1) Summary

(a)	Gross hours of machine availability		160
(b)	System Downtime*		
	Troubleshooting		(16)
	Programming		(104)*
	System inoperative components returned to JRL		(120)
(c)	Net available time	24	
(d)	Administrative time/training	0	
(e)	Productive hours available	24	
(f)	Hours used in calibration	23	
(g)	Productive utilization rate	95.8%	
(h)	Overall utilization rate	14%	

(2) Items calibrated and times expended:**

Model Number	Total Cals	Manual Ave M/H	Julie Ave M/H
Simpson 464	1	1.21	0.5
Simpson 467	20	New Item	0.4
Simpson 00053 (HV Probe)	20	New Item	0.2
Simpson 00801 (Current Shunt)	20	New Item	0.2
Fluke 8050	2	1.13	0.7
Fluke 8100	2	1.73	1.0
HP 3476	1	1.29	0.6
Keithley 168	1	1.25	0.5
Valhalla 4440	1	0.92	0.5
JAN TS352	3	0.81	0.6

*Although technically down because of an inoperative Digital Multimeter, the system could still be utilized for programming and some meter calibration.

**Data may be atypical as the system operators recognized that the LOCOST 106 is a high interest system and operators were competing for a vacant higher level position.

d. NOVEMBER 1983 -

(1) Summary

(a)	Gross hours of machine availability	160
(b)	System Downtime*	
	Calibration	(12)
	Repair	(4)
	Troubleshooting	(8)
	Programming	(16)
	System inoperative components returned to JRL	(18.7)
(c)	Net available time	101.3
(d)	Administrative time/training	(8)
(e)	Productive hours available	93.23
(f)	Hours used in calibration	93.23
(g)	Productive utilization rate	100%
(h)	Overall utilization rate	58%

(2) Items calibrated and times expended:**

Model Number	Total Cals	Manual Ave M/H	Julie Ave M/H
Fluke 8000	2	1.27	0.75
Fluke 8020	4	1.06	0.5
Fluke 8050	13	1.13	0.54
Fluke 8100	3	1.73	0.67
Fluke 8600	2	1.18	0.5
Fluke 8800	4	1.32	0.5
HP 3476	3	1.29	0.5
JAN TS352	13	0.81	0.5
Keithley 168	54	1.25	0.74
Keithley 177	5	1.43	0.5
Keithley 179	1	New Item	0.5
Keithley 191	6	1.01	0.57
Simpson 260-5	1	1.28	0.5

Simpson 260-6M	1	0.97	0.5
Simpson 260-6XL	1	1.01	0.5
Simpson 260-6XLPM	2	0.70	0.5
Simpson 270-3	6	0.94	0.5
Simpson 464	27	1.21	0.66

*Although the system was incomplete from 2-9 November 1983, system programming, training and some system production could still be accomplished.

**Calibration times may be distorted as the system operators recognize that the LOCOST 106 is a high interest system and operators were competing for a vacant higher level position.

e. DECEMBER 1983 -

(1) Summary

(a)	Gross hours of machine availability	168
(b)	System Downtime:	
	Troubleshooting	(8)
	Installation and checkout	(4)
	System inoperative components returned to JRL	(138 hours)
(c)	Net available time	18
(d)	Administrative time	(6)
(e)	Productive hours available	12
(f)	Hours used in calibration	11
(g)	Productive utilization rate	92%
(h)	Overall utilization rate	6.5%

(2) Item calibrated and times expended:

Model Number	Total Cals	Manual Ave M/H	Julie Ave M/H
Fluke 8050A	1	1.13	1.0
Fluke 8100A	1	1.73	1.0
Keithley 168	4	1.25	1.0
Keithley 177	3	1.43	0.67
Simpson 4640	3	1.21	1.0

4. ANALYSIS OF AVAILABILITY AND PRODUCTIVITY.

a. AVAILABILITY

During the period 27 July 1983 through 31 December 1983, there were 108 available workdays. The system was inoperable a total of 43 workdays due to those problems and failures discussed in paragraph 2. Thus, the system yielded a total system availability rate of 60 percent. During the 40 percent system inoperability, some test programs were prepared.

b. PRODUCTIVITY AND RETURN ON INVESTMENT.

During the 65 workdays that the system was fully operational, a total of 429 calibrations were performed both without and with system augmentation. A total of 231.25 hours were saved compared to prior manual calibration times experienced. Assuming a labor rate of $24.00 per hours, which includes direct, indirect, and overhead costs, a cost saving of $51.39 per available workday (108) was obtained. With 252 productive workdays available per year, a system cost of $140,120, and the present value of money applying a 10 percent discount rate, it appears that it would take more than 25 years to amortize the investment at TOAD. Considering just November 1983, the most productive month experienced (80.35 hours saved), 100 percent productive utilization rate and system down only 6 days and extending that to a full year and applying 10 percent discount factor, it would take approximately 9 1/2 years to amortize the system at TOAD.

5. CONCLUSIONS.

a. The system total availability rate of 60 percent, at best 70 percent in November 1983, is marginal. Non-availability may be attributed in part to new system problems, similar to those experienced in the first 90 days at White Sands Missile Range (WSMR). However, as the failures have been experienced over six months, not all may be explained as "infant mortality" as expressed by Mr. Julie. Optimisticly, repairs and modifications by JRL will reduce the system downtime to 5 percent or less, as reported by WSMR.

b. If the downtime can be reduced to 5 percent, extrapolation of the November 1983 data reveils that the system at TOAD can at best be amortized in less than 7 years.

c. Based on the $133,000 paid to JRL on 10 May 1983, a discount rate of 10 percent per year, and a savings of $3,340.35 to date, a net loss of approximately $5,000 to the Army has occurred through December 1983.

JRL LOCOST 106

SYSTEM EXPERIENCE

SACRAMENTO ARMY DEPOT (SAAD)

1. DELIVERY, ACCEPTANCE, AND PAYMENT.

The system was delivered on 22 August 1983 and "turn-keyed" and accepted on 25 August 1983 in accordance with the definitized contract modification. Full payment in the amount of $140,120 was made to JRL by DCASR, NY on 6 September 1983.

2. PROBLEMS AND FAILURES.

Serious problems and failures have been experienced with the JRL LOCOST 106 system at SAAD. They are:

a. Three components, the DM 1060 (digital voltmeter), the AC 129 (AC current standard), and an interface board failed between 22 September and 12 October 1983. They were returned to SAAD on 2 November 1983. System was back in operation on 4 November 1983. Attempts to recalibrate the system 4-9 November 1983 reveiled a bad board. The bad board was repaired 10 November 1983 by SAAD personnel at JRL request.

b. On 14 November 1983, SAAD experienced damage to a John Fluke digital voltmeter during calibration. System trouble shooting, 15 through 22 November 1983, revealed that the problem was high voltage "peaking". The problem was identified to AC 129 and PA 225. The problem continued to be experienced and "trouble shooting" continued through the month and into December 1983. The two units were returned to JRL on 13 December 1983. The units were returned to SAAD on 20 January 1983. The PCO formally notified JRL to modify all AC 129's with increased insultation to preclude grounding as well as to solve "peaking" problem. The returned unit (PA 225) experienced pulsing problem to a lesser degree and was returned to JRL on 25 January 1984.

3. PRODUCTIVITY.

a. AUGUST 1983 - System training was conducted from 25 August 1983 to 31 August 1983, thus no production during this period.

b. SEPTEMBER 1983

(1) Summary

(a)	Gross Available Hours	168 hrs
(b)	MINUS Downtime:	
	Programming	10 hrs
	Training	40 hrs
	Maintenance	7 hrs
	Inoperative JRL 106 System(*)	55 hrs

(*) AC voltage system erratic 7 hrs on 13 September 1983 - problem disappeared. DM 1060 failed 22 September 1983 - system inoperative rest of month. An additional 27 hrs expended troubleshooting DM 1060.

(c) Net available hours 56 hrs

(d) Minus administrative hours 2 hrs

(e) Net available production hours 54 hrs
(f) Hours used in calibration 33.7 hrs
(g) Productive utilization rate 62%
(h) Overall utilization rate 20%

(2). Items calibrated and times expended:

Model Number	Total Cals	Previous Ave M/H	Julie Ave M/H
ME-70	6	.77	.5
TS-352	21	.78	.5
JF-8600	31	.83	.65

c. OCTOBER 1983

(1) Summary

(a)	Gross Available Hours	160 hrs
(b)	MINUS Downtime:	
	Maintenance	10 hrs
	Inoperable components returned to JRL	150 hrs
(c)	Net available hours	0
(d)	Productive utilization rate	0

(2) Items calibrated and times expended: None

d. NOVEMBER 1983

(1) Summary

(a)	Gross available hours	160 hrs
(b)	MINUS Downtime:	
	Component repair after receipt from JRL*	16 hrs
	Depot closure, 25 Nov	8 hrs
	Maintenance	16 hrs
	System calibration	24 hrs
	Training	8 hrs
	Inoperative 106 system, high voltage "peaking"	88 hrs
(c)	Net available hours	0 hrs
(d)	Productive utilization rate	0 hrs

* DM 1060 inoperative when received - blown fuses

* AC 129 inoperative when received - loose circuit boards

(2) Items calibrated and times expended: None

e. DECEMBER 1983

(1) Summary

(a)	Gross Available Hours	168 hrs
(b)	MINUS Downtime:	168 hrs
(c)	Net Available Hours	0
(d)	Productive utilization rate	0

(2) Items calibrated and times expended: None

4. ANALYSIS OF AVAILABILITY AND PRODUCTIVITY.

a. AVAILABILITY - During the period 25 August 1983 through 31 December 1983, there were 87 available workdays. The system was inoperable 68 days. Thus, the system had a full availability rate of only 22 percent.

b. PRODUCTIVITY - Only during the month of September 1983 was there any productivity on the system. Fifty-eight meters were calibrated, saving 13.08 manhours over prior manual times. A productivity analysis or amortization computation is impractical due to the lack of system availability since the time of acceptance on 25 August 1983.

5. CONCLUSION.

The JRL LOCOST 106 performance at SAAD has not been satisfactory. Applying a 10 percent per year interest rate to the payment of $140,120, the Army has lost approximately $4,000 in interest, offset by $313.92 in savings at SAAD or a net loss of approximately $3,700.

JRL LOCOST 106

SYSTEM EXPERIENCE

TOOELE ARMY DEPOT (TEAD)

1. DELIVERY, ACCEPTANCE, AND PAYMENT.

The system was delivered on 20 September 1983 and "turn-keyed" and accepted on 23 September 1983 in accordance with the definitized contract delivery schedule. Full payment of $140,120 was made to JRL by DCASR, NY on 28 September 1983.

2. PROBLEMS AND FAILURES.

Peaking problems, like those experienced at SAAD, were first identified on 25 October 1983. Trouble shooting and discussions with JRL technical personnel resulted in the determination that the AC 129 and PA 225 were the sources of trouble. Both items were shipped to JRL on 9 December 1983 and both items returned to TEAD on 12 January 1984. AC 129 was received with a dislodged printed circuit board and the PA 225 with a broken resistor. Both were repaired by TEAD at JRL's request. On 13 January 1984, during system checkout, it was noted that voltage flows when the system is in the standby mode. This is both a potential safety, as well as an operations problem. JRL notified to correct the problem on 17 January 1984. JRL provided a new printed circuit board and after some problems the system became operational on 1 February 1984.

3. PRODUCTIVITY.

a. SEPTEMBER 1983 - The 40 hours that were available during the month were used for orientation training, thus no production.

b. OCTOBER 1983 - One hundred and sixty hours were available; 128 were used in system calibration, program writing and training. The system was inoperable the remaining 32 hours due to the voltage peaking experienced with the AC 129 and PA 225.

c. NOVEMBER 1983.

(1) Summary

(a) System down entire month	
(b) Gross hours of machine availability	160
(c) Minus downtime	160
OJT	(10)
Programming	(40)
Verifying calibration of AC 129 using JF 540B at 1MHZ.	(4)
System not used due to high voltage pulse problem.	(106)
Net available time	0
Minus administrative time	0

Productive hours available	0
Productive utilization rate	0

(2) Items calibrated and times expended:
None

d. DECEMBER 1983

(1) Summary

(a)	Gross hours of machine availability	168
(b)	Minus downtimes	168
	Components inoperable and returned to JRL	112
	Maintenance time (local)	0
	Programming time, etc.	28
	Troubleshooting with JRL, packing and shipping	28
(c)	Net available time	0
(d)	Minus admin time	0
(e)	Productive hours available	0
(f)	Productive utilization rate	0

(2) Items calibrated and times expended:
None

4. ANALYSIS OF AVAILABILITY AND PRODUCTIVITY.

a. AVAILABILITY - During the period 23 September 1983 through 31 January 1983, there were a total of 66 available workdays. Of the 66 available workdays, the system was fully operational only 21 days, down 45 workdays, for 32 percent availability rate.

b. PRODUCTIVITY - There has not been any production on this system since its acceptance on 23 September 1983. Training and some programming has been accomplished.

5. CONCLUSION.

The JRL LOCOST 106 performance at TEAD has been unascertainable. The system had an availability rate of 32 percent with no production. Using a 10 percent annual rate of interest, the Army experienced a net loss of approximately $3,200 during the period 28 September 1983 through 31 December 1983.

JRL LOCOST 106

SYSTEM EXPERIENCE

RED RIVER ARMY DEPOT (RRAD)

1. DELIVERY, ACCEPTANCE, AND PAYMENT.

The system was delivered on 17 October 1983 and "turn-keyed and accepted on 19 October 1983, in accordance with the revised delivery schedule contained in the definitization modification. DCASR, NY paid JRL the full amount of $140,120 on 5 December 1983.

2. PROBLEMS AND FAILURES.

The system contained two used components (DM 1060 and AC 129) when delivered; JRL informed the PCO that he would replace the used units NLT 12 December 1984. JRL delivered a replacement DM 1060 on 11 January 1984. The item failed acceptance test and was returned to JRL on 17 January 1983. A new AC 129 was delivered on 26 January 1984. The used DM 1060 experienced some drifting, however, the problem is no longer present. Cause of the drifting is unknown. New DM 1060 was delivered to RRAD on 3 February 1984.

3. PRODUCTIVITY.

a. OCTOBER 1983 - System calibration, training and programing conducted; no production work performed.

b. NOVEMBER 1983 -

(1) Summary

(a)	Gross hours of machine availability	176
(b)	Minus downtime	0
	Component(s) inoperable and returned to JRL	(0)
	Maintenance time (local)	(0)
	Programming time	(55)
(c)	Net available time	121
(d)	Minus administrative times	-88
(e)	Productive hours available	33
(f)	Hours used in calibration	16.4
(g)	Productive utilization rate	49.6%
(h)	Overall utilization rate	9.3%

(2) Items calibrated and times expended:

Model	Total Cals	Previous Avg M/H	Julie Avg M/H
8500A	3	2.66	1.5
3490A	7	2.34	.70

Model	Previous Avg M/H	Calibrations	Julie Avg M/H
91H	1	1.96	1.5
3440A	3	.98	.5
5000-52351A	1	2.0	.5
9632M	2	1.25	.75
3465A	1	2.0	1.0
3456A	1	3.0	1.0

c. DECEMBER 1983 -

(1) Summary

(a)	Gross hours of machine availability	168
(b)	Minus downtimes	0
	Components inoperable and returned to JRL	0
	Maintenance time	0
	Programming time	51
(c)	Net available time	117
(d)	Minus administrative times	0
(e)	Productive hours available	117
(f)	Hours used in calibration*	76.78
(g)	Productive utilization rate	65.6%
(h)	Overall utilization rate	45.7%

*Limited production due to available workload.

(2) Items calibrated and times expended:

Model	Previous Avg M/H	Calibrations	Julie Avg M/H
WV-591	1.00	18	.40
WV-98C	1.73	1	2.00
240	1.36	3	.76
260	1.55	1	.50
260-6XLP	1.46	1	.50
260-7P	1.50	1	.50
310	1.44	3	.66
3400A	.98	16	.98
3456A	3.00	2	1.00
3465A	2.00	2	1.00

3490A	2.34	15	.67
400E	1.75	1	.50
427	1.20	1	1.00
427A	1.90	1	.50
428B	1.69	2	.50
5000-S2351A	2.00	2	.50
51339A	1.85	2	2.00
630	1.52	1	.50
8000A	1.79	1	.50
8030A01	1.75	1	.50
8050A	1.58	5	.50
8300A	3.32	4	.40
8500A	2.66	7	1.57
8600A	1.78	4	.50
91H	1.96	2	1.50
92C	1.36	1	1.50
9632M	1.25	2	.50

4. ANALYSIS OF AVAILABILITY AND PRODUCTIVITY.

a. AVAILABILITY - Total of 49 workdays were available during the period 19 October 1983 through 31 December 1983. The system was operational for the entire period, or 100 percent availability.

b. PRODUCTIVITY - During the period 19 October 1983 - 31 December 1983 (49 workdays) 119 calibrations were performed on this system. Savings experienced over prior manual times equal 114.6 manhours. At $24 per manhour, a total savings of $2,750 was realized, $537 in November and $2,213 in December 1983.

5. CONCLUSIONS.

System availability at RRAD has been good since the system was accepted (with two used components) on 19 October 1983. Considering the most productive month, December 1983, with 21 available mandays, extending it to a year with 252 available mandays, applying a standard 10 percent discount factor and considering the investment of $140,120; it should take approximately 8 years to amortize the investment.

JRL LOCOST 106

SYSTEM EXPERIENCE

ANNISTON ARMY DEPOT (ANAD)

1. DELIVERY, ACCEPTANCE AND PAYMENT.

The system was delivered on 7 November 1983 and "turn-keyed" and accepted on 9 November 1983 in accordance with the definitized contract delivery schedule. Payment in full of $140,120 was made to JRL by DCASR, NY on 16 November 1983.

2. PROBLEMS AND FAILURES.

a. The system was operational only 15 workdays, 9 November - 2 December 1983.

b. The AC 129 component failed on 2 December 1983 and controller (HP 9825) also experienced problems that date. AC 129 was shipped to JRL on 9 December 1983. Replacement controller received from JRL on 27 December 1983. AC 129 was returned to ANAD on 23 January 1984.

3. PRODUCTIVITY.

a. NOVEMBER 1983 - Calibration, training, and programming conducted during the 14 workdays available; no production work done.

b. DECEMBER 1983 - System was non-operational all month, thus no productivity in this month.

4. ANALYSIS OF AVAILABILITY AND PRODUCTIVITY.

a. AVAILABILITY - During the period 9 November 1983 through 31 December 1983, there were 35 available workdays. The system was operational 15 workdays for an availability rate of 43 percent.

b. PRODUCTIVITY - No production has been experienced.

5. CONCLUSION.

Due to system downtime, no production has been accomplished.

JRL LOCOST 106

SYSTEM EXPERIENCE

LETTERKENNY ARMY DEPOT (LEAD)

1. DELIVERY, ACCEPTANCE, AND PAYMENT.

The system was delivered by JRL on 24 March 1983. Under a special partial payment provision approved by SARDA at JRL's request, JRL was paid 95 percent of the system cost or $133,000 on 10 May 1983 prior to acceptance of the system by the Army. JRL, as a result of definitization negotiations and resulting modifications, was to install and "turn-key" the system not later than 5 August 1983. The system failed initial acceptance test on 5 August 1983 due to a faulty CS129. The component was returned to JRL, per Mr. Julie's instructions, on 29 August 1983. On 6 December 1983, JRL again delivered the component, however, it too failed acceptance test on 8 December 1983. As of 6 February 1984, the component has not been repaired nor has the system been accepted. The PCO has, in formal letters and phone calls, told JRL to repair, install, and "turn-key" the system.

2. PRODUCTIVITY/AVAILABILITY.

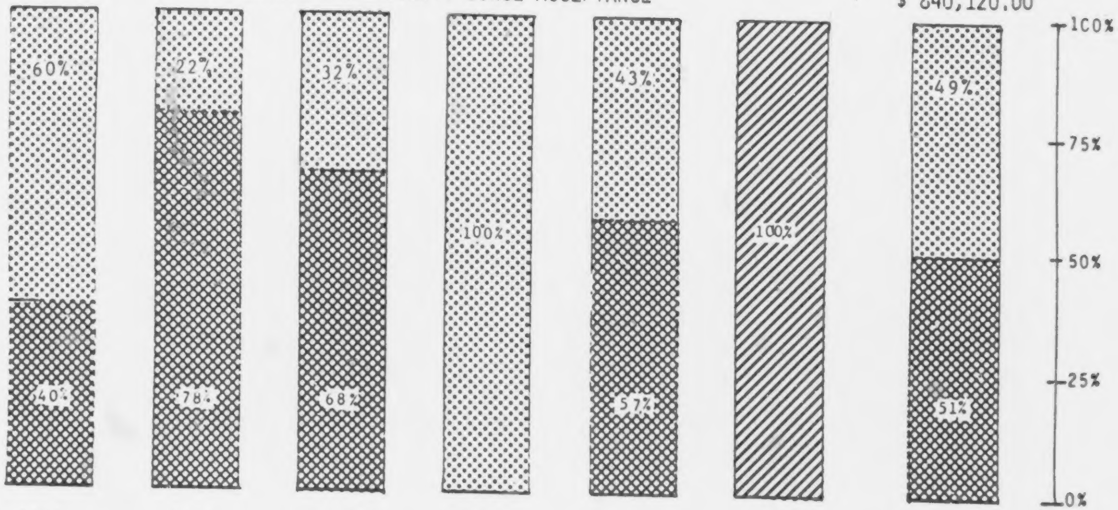
As the system has not been accepted, there has been no production on this system.

3. CONCLUSION.

JRL's contract performance on this system has been unsatisfactory. Some 10 months have passed since delivery of the system and over 8 months have passed since JRL was paid $133,000. This lack of performance has caused an approximate $8,000 loss to the Army in interest alone (10 percent cost of money), plus added Army administrative costs.

JRL LOCOST 10E
SYSTEMS AVAILABILITY SINCE ACCEPTANCE

CONTRACT AWARDED 26 MAY 82
$ 840,120.00



	TOAD	SAAD	TEAD	RRAD**	ANAD	LEAD	MEAN AVAILABILITY*
ELIVERY:	28MAR83	22AUG83	20SEP83	17OCT83	7NOV83	24MAR83	
CCEPTED:	27JUL83	25AUG83	23SEP83	19OCT83	9NOV83	NOT ACCEPTED	
ATE PAID:	10MAY & 25AUG83	6SEP83	28SEP83	5DEC83	16NOV83	10MAY83	
OUNT:	$140K	$140K	$140K	$140K	$140K	$133K	
OWN/TOT:	43/108	68/87	45/66	0/49	20/35	NA	176/345

*DOES NOT INCLUDE LEAD DATA.

**USED UNITS

▦ - SYSTEM NOT AVAILABLE

▨ - SYSTEM NOT AVAILABLE AS NOT ACCEPTED
JRL PAID 95% ($133,000)

░ - SYSTEM FULLY AVAILABLE

AS OF: 31 DEC 83

DEPARTMENT OF THE ARMY
HEADQUARTERS TOBYHANNA ARMY DEPOT
TOBYHANNA, PENNSYLVANIA 18466

REPLY TO ATTENTION OF
SDSTO-QA-C

SUBJECT: Augmentation of the JRL LOCOST 106 Automated Calibration System (ACS)

Commander
US Army Materiel Development
and Readiness Command
ATTN: DRCTM-S
5001 Eisenhower Avenue
Alexandria, VA 22333

1. Reference message, DRSDS-QM, HQDESCOM, 231700Z JAN 84, SAB.

2. Enclosed is the list of external calibration standards required to augment the Julie LOCOST 106 Automated Calibration System.

3. Inquiries pertaining to this correspondence can be directed to Mr. Eugene L. Lasecki, C/TMDE Support Branch, AV 795-6504, or Mr. Eugene C. Marcus, C/ATMDE Calibration Section, AV 795-7646.

4. "Quality Equipment and Support for an Excellent Army."

FOR THE COMMANDER:

1 Encl
as

WILLIAM J. LORD
Director for Quality Assurance

CF:
Cdr, HQDESCOM, ATTN: DRSDS-QM

EXTERNAL CALIBRATION STANDARDS USED TO AUGMENT THE JULIE LOCOST 106 CALIBRATION SYSTEM

CALIBRATION STANDARD	MODEL NO. OF UUT	RATIONALE
Biddle Gray 601147-1 Resistance Standard	JAN TS352 USM223 Simpson 260 series 270 series	Used for R X 1 resistance ranges because of LOCOST 106 excitation current limitations.
Fluke 410B High Voltage Power Supply	JAN TS352 Simpson 260 series	Maximum LOCOST 106 DC voltage is 1200 volts. These meters require 5KV.
IRC CR10M, CR100M	Fluke 8000 8600 Simpson 464	Required to test UUT resistance ranges above 10 MEGOHM; LOCOST 106 system limited to 10 MEGOHM.
Holt 250/NHR SF613-1 AC current standards	Keithley 179	Required to test UUT AC current above 2A; LOCOST 106 system limited to 2A AC.

DEPARTMENT OF THE ARMY D. Gauntt AV 829-3528
RED RIVER ARMY DEPOT
TEXARKANA, TEXAS 75501

SDSRR-QA 27 Jan 84

SUBJECT: Augmentation of the JRL Locost 106 Automated Calibration System

Commander
US Army Material Development and Readiness Command
ATTN: DRCTM-S
Alexandria, VA 22333

1. Reference, message, DESCOM, 231700Z Jan 84, SAB.

2. Instructions requested each depot using the JRL 106, prepare a list of the external standards used as augmentation for the JRL 106. These external standards are as follows:

a. Low Resistance - The following resistors are used on multimeters which have high current outputs and cannot be checked on the JRL 106. The Decade is required for meters that cannot run on the JRL 106, because of their non-linear scale. The software will not allow the use of non-linear scales (Logrithmic Scales).

(1) 1 OHM Gen Radio 1440-9601

(2) .1 OHM Gen Radio 1440-9000

(3) 10 OHM Biddle Gray 601244

(4) 100 OHM L&N 4030

(5) Resistance Decade Biddle Gray 71-631

b. High Resistance - The following resistors are required because the JRL 106 will output only 10 Megohm. Some meters will need to be checked to 1000 Megohm.

(1) 1 thru 10 Megohm CR10M

(2) 10 thru 100 Megohm CR100M

(3) 1000 Megohm CR501

c. Low AC Volts - The following items are used to calibrate RMS voltmeters having ranges below 100 milivolts RMS. The JRL 106, AC Std will not drive a ratio box. For this reason the H/P 745 and RB 503C are used to cover the area of .1 volt to .001 volt RMS.

(1) 745 AC Std H/P

(2) RB 503C AC Ratio Box North Atlantic

d. High Frequency Voltage Checks - 652 A Oscillotor H/P This item is used to calibrate AC voltmeters having a frequency response greater than one megahertz. The JRL 106 will not go higher than one megahertz.

e. High Current DC - TS-689 B/U Meter Test Set
This item is used to calibrate meters which have amperage range of greater than 10 AMP DC. The JRL 106 will not output more than 10 AMP DC.

F. DC Ratio Test - 335A DC Standard John Fluke
This item is used to perform DC ratio calibrations. The JRL 106 outputs only one source of DC volts. To do a ratio test, you need two sources of voltage which are variable and accurate.

3. When a unit being tested with the JRL 106 fails calibration checks and needs major realignment or repair, a duplicate set of equipment is needed. The JRL 106 is neither designed for major realignment nor repairs of the items being tested.

4. "Quality Equipment and Support for an Excellent Army."

FOR THE COMMANDER:

James F Barling
JAMES F. BARLING
Chief, Quality Systems & Management Division

CF:
DESCOM, DRSDS-QM

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      ROUTINE

                         00219/007009/026A - DT: 032/2008          TS
CT
 ---DS-SAC-SM-RE-QA-ED-PP-OP-SANG-CP-PT-CO-OM-IS-SS-SF-XAM-IN-DE-LD- 3  -
NFO-------------------------------------------------------------------------
CT                                   2
----ATTNG-API-CCNC-BHA-INSCOM-XSO-CE-TM-MS-DMR-DRA-DRM-GS-MT-SGS-    BOOKS
NFO-------------------------------------------------------------------------
TTUZYUW RUWMFWA5026 0321836-UUUU--RUKLDAR.
NR UUUUU
 312230Z JAN 84
M CORSAAD SACRAMENTO CA //SDSSA-Q//
O RUKLDAR/CORDARCOM ALEX VA //DRCTM-S//
NFO RUEPABE/CORDESCOM CHAMBERSBURG PA //DRSDS-QM//
UEPABA/CORLEAD CHAMBERSBURG PA //SDSLE-Q//
T
NCLAS B
BJECT:  AUGMENTATION OF THE JRL LOCOST 106 AUTOMATED CALIBRATION
YSTEM (ACS).
.  REFERENCE DRSDS-QM MSG P231700Z JAN 84 SAB
.  IN ACCORDANCE WITH REFERENCE A, THE FOLLOWING IS SUBMITTED:
         STANDARDS REQUIRED                  REASON
   A.    HP 652A                    PERFORM FREQUENCY RESPONSE CHECKS
                                    TO 10MHZ ON ME-30'S, V100M'S,
                                    HP400'S, HP3400'S, HP3403
   B.    TEK SG 503                 PERFORM FREQUENCY RESPONSE CHECKS
                                    TO 100MHZ ON ME-26'S, HP410'S,
                                    BAL 323-01, JF8920'S, HP 3406'S,
                                    HP 411'S, AND ME-247'S.
   C.    JF4108                     PERFORM 5000VOLT DC CHECKS ON
AGE 02 RUWMFWA5026 UNCLAS
                                    TS352'S AND SIC260'S.
     D.  FISHER TP 1290               PERFORM 5000 VOLT AC CHECK ON
                                      SIC 260'S.
T    #5026    NNNN
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                         03812/0R2068/024A - DT: 031/2207          TS
ACT
 ----DS-SAC-SM-RE-QA-ED-PP-OP-SANG-CP-PT-CO-OM-IS-SS-SF-XAM-IN-DE-LD- 3  -
INFO------------------------------------------------------------------------
ACT                                  2
-----ATTNG-API-CCNC-BHA-INSCOM-XSO-CE-TM-MS-DMR-DRA-DRM-GS-MT-SGS-   BOOKS
INFO------------------------------------------------------------------------
RTTUZYUW RUWJRTA0516 0312150-UUUU--RUKLDAR.
ZNR UUUUU
P 301915Z JAN 84
FM CDR TEAD TOOELE UT//SDSTE-QAA-S//
TO RUKLDAR/CDRDARCOM ALEX VA// DRCTM-S//
INFO RUEPABE/CDR DESCOM CHAMBERSBURG PA//DRSDS-QM//
BT
UNCLAS B
SUBJ:  AUGMENTATION OF THE JRL LOCOST 106 AUTOMATED CALIBRATION
SYSTEM (ACS)
A.  DRSDS-QM MSG DTD P231700Z JAN 84 SAB.
1.  AS REQUESTED IN REFERENCED MESSAGE, THE FOLLOWING INFORMATION
IS SUBMITTED:
    EXTERNAL STANDARD:  GERTSH MODE6, 1000 AC RATIO STANDARD
    USAGE:  CALIBRATION OF EQUIPMENT FOR LOW VOLTAGE IN AC MODE WITH
HIGH ACCURACY.
2.  POC FOR FURTHER INFORMATION IS MR. DEAN PIERCE, SDSTE-QAA-S
AV 790-2644.
3.  "QUALITY EQUIPMENT AND SUPPORT FOR AN EXCELLENT ARMY."
BT     #0516    NNNN
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Training

QUESTION: How much money has the Army invested in training the average infantryman by the time he has reached two years time in service? (By "average", I mean mechanized infantry, not ranger, paratrooper, special forces, airmobile or other specialized infantry).

ANSWER: An individual who enlists in the Army as an infantryman (11B) will attend a 12 week infantry one station unit training (OSUT) course conducted at Ft Benning. The training cost for each soldier is $5561. If the individual has been identified for assignment to an infantry unit with the Bradley Fighting Vehicle (M-2), he will receive an additional 3 weeks of training oriented specifically on that item of equipment. The cost of the additional training is $1324. The soldier would rotate to his first duty assignment upon completion of this training. Under normal circumstances he would receive no further formal training in the Institutional Training Base during his first two years in the Army.

KEVLAR HELMET AND BODY ARMOR

QUESTION: How much does the Kevlar helmet cost per helmet? The new Kevlar body armor per vest?

ANSWER: The unit price of the Kevlar helmet is $104.36.
Additional authorized items are used with the helmet:
The cover, helmet, camouflage, white snow, unit price is $3.84.
The pad, ground troops parachutist's helmet unit price is $1.20.
The strap, retention, ground troops parachutist's helmet unit price is $1.42.
The unit price of the Kevlar body armor is $171.94.

QUESTION: When does the Army plan to finish equipping its active duty and reserve component forces with the new helmet and body armor?

ANSWER: Kevlar helmet - fielding for active and reserve components are estimated to be completed in FY 88.
Kevlar body armor is being fielded on replacement as-required basis with anticipated completion to active and reserve components in FY 89.

QUESTION: Commercially available body armor will stop an AK-47 round at point-blank range. Will the new body armor be able to do this?

ANSWER: The Kevlar body armor is designed as a fragmentation vest and will not stop a rifle round. It will stop projectiles up to 1500 feet per second with 124-grain bullets fired from a .357 magnum. We do have a variable body armor made of ceramic which will stop an AK-47 round. It is not issued to all soldiers because of its weight. Eighty each variable body armor were provided to the Marine Corps in Lebanon. They are primarily used when extensive body movement is not required.

BATTLEFIELD CASUALTIES

QUESTION: Can you provide us with an estimate of the cost of recovering, identifying, transporting, providing mortuary services for, and providing appropriate burial honors for the remains of an Army soldier killed in combat, using Grenada as a baseline?

ANSWER: The estimated cost is $4,740 per remains. This figure is based on an average of actual costs where possible for the eleven Army Grenada fatalities. The special circumstances of this incident, along with the size of the data base, project an estimated cost higher than anticipated for greater numbers of combat fatalities.

COST OF MEDICAL CARE IN COMBAT

QUESTION: Can you provide us with an estimate of the cost of providing medical care for an Army soldier wounded in combat, again using Grenada as an example?

ANSWER: The typical soldier wounded in Grenada was a 22 year old, E-4, who received a single penetrating wound to an extremity. The cost of medical care for this typical soldier was $8850.00, which consisted of the medical labor, supplies, equipment use, ancillary support (x-ray, pharmacy, laboratory, food service, etc.) base operations and other overhead, as accounted for in the uniform chart of accounts cost distribution system, associated with 30 days of hospitalization.

Individual Protective Equipment

QUESTION: Please provide the committee with a report setting forth the Army's view on the recent technological advances in the field of personal protection, including helmets, body armor, flame proof cloth, face shields, and other devices and techniques employed by police forces, explosive ordnance disposal personnel, air crews, race drivers, and others who face death or serious injury from traumatic wounds or burns. The report should address trade-offs between weight, protection, and soldier mobility, between cost and protection, between cost of purchasing protective items and cost of treating casualties or training replacements for those who are killed in action, and discuss ways in which we can better preserve and protect our increasingly scarce and costly trained military personnel on the battlefield of today and tomorrow. It should also examine the interface between chemical protective clothing and equipment and ballistic and flame protective clothing and equipment, with a view toward the cost effectiveness of integrating the two systems and making them comprehensive.

ANSWER: The Army has historically led industry and foreign governments/contractors in the advancement of state-of-the-art materials, clothing and equipment used to protect soldiers against traumatic wounds and burns caused by military related training and battlefield environments. The products of the Army's research and development have entered the public domain resulting in substantial exploration by the commercial sector. The protective equipment industry has marketed related protective clothing and equipment for use by the private citizen, and local, state and federal law enforcement agencies. It must be noted that the Army continues to receive requests from law enforcement agencies for technical support and guidance on protection against ballistic threats. The Army/Air Force developed clothing made of flame retardant material to protect aircrews against burns. The Army utilized the same technology to develop flame retardant clothing for tank crew members. This same technology is currently used by race car drivers and pit crews throughout the US. The Army has developed and is testing a complete protective system for use by EOD personnel. This system utilizes state-of-the-art ballistic protective material (Kevlar), transparent ballistic face shields, and a ballistic chest plate. The outer layer of the suit is fabricated with a flame retardant fabric. The in-house development of this system was initiated only after US and UK commercially available EOD Systems failed in test to provide the necessary protection. Police departments from two large metropolitan cities have sought the Army's help in the past two years after having experienced either the loss of life or limb by EOD persons wearing commercial EOD systems or the reluctance of their personnel to wear these systems because of their adverse impact on mobility and the lack of creditable protection.

The Army has conducted trade-off studies which considered parameters such as protection levels, cost, weight, bulk, human factors, material availability, and producibility. It is an acknowledged fact that in order to provide 100% protection against all battlefield threats, the protective clothing would cause the soldier to become nearly immobile, would quickly cause him to become fatigued and suffer from heat stress thereby negating his military offensive or defensive effectiveness.

Ongoing R&D is addressing new fibers and materials to reduce weight and bulk, thus increase soldier mobility. To date the various options for weight reduction have shown higher causalties when predicted by a casualty modeling technique. Work is underway with major fiber producing companies to assess the ballistic protection and flame retardant potential of new polymers.

Studies have been attempted to ascertain the comparative cost between the purchasing of protection items, the cost of treating casualties or training replacements. In addition, the studies have considered the cost to the government for lifetime disability payments for veterans with debilitating injuries and lengthy payments to family members of fatalities. The results of these studies could not be used in a simple economic trade-off because of the moral question: What is the true value of a human life? The USA population and the Army has always placed its priority on protecting its citizens against injury or death.

The Army has conducted two studies to develop a comprehensive integrated protective clothing system for the future battlefield. However, the conflicting requirements of comfort, soldier mobility versus multi-threat protection, and the limits of existing and projected protective materials will make it an extremely difficult technical challenge to achieve the required military needs. Integrated protective clothing systems have been fabricated and evaluated. While results to date have shown an unacceptable degradation of soldier performance, the objectives appear achievable and research efforts need to be continued to provide the required integrated protection to our soldiers.

M16A2 Rifle

QUESTION: This year, the Army is requesting $39.6 million to purchase 75,000 M16A2's, the improved version of the Army's present rifle. When and to which units does the Army intend to issue these weapons?

ANSWER: Fielding will commence in mid-FY86 in combat units. Priority will be to combat riflemen in ranger battalions and airborne infantry battalions, followed by other maneuver battalions and brigades. Specific fielding dates will be determined when contract award becomes more imminent and a delivery schedule is provided to the Army.

QUESTION: When does the Army plan to complete issuing the M16A2 to its forward deployed combat forces and high priority active duty and Reserve Component forces in the United States?
ANSWER: Fielding dates for forward deployed and high priority active duty and Reserve Component forces have not been determined. This information will be developed as contract award becomes more imminent and a delivery schedule is provided to the Army.

Personal Defense Weapons

QUESTION: This year, the Army is requesting $5.0 million to purchase 14,650 9-millimeter Personal Defense Weapons. When and to which units does the Army plan to issue these weapons?
ANSWER: A distribution plan has not been established. This will occur after a production contract is awarded and a delivery schedule is provided to the Army.

Joint Services Small Arms Program

QUESTION: Under the Joint Services Small Arms Program (JSSAP), a combat shotgun and a new submachine gun are under development. When will these weapons be ready to go into production?
ANSWER: The current Joint Services Small Arms Program combat shotgun (close assault weapon), and submachine gun efforts are in 6.3a nonsystem advanced development. The efforts are for the development and delivery of technology demonstrators. Based upon successful technology demonstration, and service generated requirements, the efforts would be expected to transition to 6.3b advanced development (system) in FY 1986, followed by full scale engineering development in FY 1987. Production could be expected for these weapons in FY 1990.

TERRORISM

QUESTION: A new category of warfare has been added to the world's list of horrors, state-sponsored terrorism. Like any other form of warfare, it is the application of force of arms to achieve a state's international objectives. Unlike other forms of warfare, it is clandestine and deniable, so overt retaliation aimed at the sponsoring state can be characterized to the watching world as an unprovoked act of aggression. It is, in fact, somewhat camouflaged in its true nature and purpose by calling it terrorism, because the crucial distinction - its state-sponsorship - is lost. I have begun calling this novel approach to armed aggression "clandestine warfare." Indeed, the number of terrorist incidents and their seriousness has been rising every year. Since Special Operations Command (SOC) is an Army command, and since Army personnel, their dependents, Army facilities, and Army equipment have been targets for these new clandestine warfare assaults, the Army should be hard at work devising tactics and methods for dealing with this new type of war. Please describe the progress the Army has made in doctrine, force structure, training, equipment, and plans for coping with this new form of warfare.

ANSWER: Terrorism is not a new phenomenon to the Army. We have been subjected to acts of violence which under today's definition would be defined as terrorism almost since the inception of the force. In recent history, the Army has been called upon relatively frequently to respond to terrorist acts in almost every corner of the globe.

Terrorism, however, is dynamic. The personnel, organizations, weapons and tactics involved change as the circumstances dictate. Therefore, the Army has initiated action to make sure that its anti-terrorism capabilities are as adequate as they can be given the constraints within which we operate.

On 3 Nov 1983, the VCSA directed the DCSOPS to form a task force to determine the Army's posture vis-a-vis the current terrorist threat.

This task force was charged with determining:

a. What Army anti-terrorist plans and programs are currently in existence in the physical security, intelligence, training, and personnel security areas.

b. The adequacy of scope and application of those plans and programs to provide force protection.

c. Those actions required to improve the Army-wide anti-terrorist capabilities.

The efforts of the task force are on schedule for completion on 30 March 84.

QUESTION: Clearly, clandestine warfare represents yet another Soviet innovation in the application of armed violence to achieve its goals. While the most harmful and spectacular application of the new form of war was the Shiite suicide commando's destruction of the Marine battalion headquarters in Beirut, the fortification of the U.S. Capitol, the White House, the State Department, and the Pentagon vividly demonstrate the psychological impact and the international reach of this phenomenon. They also demonstrate that we are unable to deter this sort of attack, because of the secrecy and deniability built into the clandestine soldier's cover - the international terrorist network. What are your views on whether and how we can deter armed attacks by soldiers in this clandestine war?

ANSWER: The Army considers terrorists not as soldiers but as criminals.

By law terrorism is an act of criminal violence. The Army, except in very specific cases, is prohibited by the Posse Comitatus Act and its supporting regulations from becoming involved in law enforcement functions.

In addressing the question of deterring these criminals before they perpetrate their acts, the Army recognizes that it has a large total force, the components of which (military personnel, civilian employees, family members, installations, and equipment) have varying degrees of vulnerability. Deterrence can be accomplished to some degree (one can never wisely predict that even the best protective measures will deter all attacks) by increasing physical security at installations. Furthermore, emphasizing in training and in internal communications the nature of this threat will raise the level of awareness of all members of the total force, with the objective of further deterring attacks through increased vigilance. The key to deterring specific acts of terrorist violence in the U.S. lies in specific warnings to the Army from the civilian agencies which are charged with intelligence collection at home and abroad. Those U.S. units stationed abroad must rely to a great extent on the assistance of foreign agencies for the same kind of warnning. Both at home and abroad, timely receipt of usable intelligence will enable the Army to increase its protective posture at threatened locations or for threatened personnel, with the aim of deterring the planned act by presenting the terrorists with a more difficult target.

Even with increased physical security, increased vigilance by our personnel, and better intelligence, there will unfortunately still be those attacks which will not be deterred.

QUESTION: The sponsoring state's ability to plausibly deny that it was in fact behind the armed attack is the key to the utility of this form of warfare. Since the only way we can penetrate the tight security under which these operations are conceived and conducted is through the use of our most sensitive intelligence and counter-intelligence techniques, making available to the world the evidence we have gathered about state-sponsorship reveals intelligence sources and methods we must keep secret to protect our security. Given the cynicism and skepticism which dominates the international media, how do we overcome the plausible deniability inherent in these acts of clandestine war, and hold the sponsoring state to account before the world?

ANSWER: The issue of holding to account before the world a state which sponsors international terrorism is a foreign policy issue which properly falls within the purview of the Department of State.

STRATEGIC DEFENSE

QUESTION: At the opposite end of the scale of warfare from clandestine warfare lies nuclear warfare. The Army has now lost a portion of its ballistic missile defense funds to the new Department of Defense-level account for the President's strategic defense initiative. What role will the Army play in this initiative?

ANSWER: The Army will be responsible for developing all elements of the terminal phase tier of a layered BMD concept. In addition, the Army is responsible for the development of interceptor and sensor technologies for mid-course concepts and major directed energy concepts for mid-course and boost phase intercepts. The Army will also develop the preponderance of battle management and data processing technology for the entire Strategic Defense Initiative (SDI). The Army will be responsible for nearly half of the FY85 SDI funds and will play a role in the execution of programs involving an additional 20% of FY85 expenditures. Although the Army Ballistic Missile Defense Program has "lost" its two major program elements to the SDI, Army activities in ballistic missile defense are projected to grow.

QUESTION: In the event that the President and Congress decide that it is necessary to proceed with production and deployment of an active strategic defense, what role do you see the Army playing?

ANSWER: The Army perceives its role as one of overall responsibility for deployment and operation of ground based assets of the Strategic Defense Initiative and operational control of space segments of systems which are predominantly ground based (such as relay mirrors for ground based laser systems). The Army would be responsible for the integrated development, deployment, and operation of ground based radar systems, airborne (potentially unmanned) long endurance optical sensors, and high endoatmospheric/exoatmospheric chemically propelled interceptor missiles. We believe the Army's experience is uniquely suited for overall system engineering and battle management as well as the formulation of the system architecture.

QUESTION: Do you believe that a major Army strategic mission and the share of the Army budget it would command would detract from the Army's ability to sustain its ground combat forces?

ANSWER: In an environment of ever-increasing risks to our National security across the spectrum of conflict, the balance between strategic and conventional force capabilities is one of the more difficult decisions which the Defense Department must face. When we apply the reality of constrained resources to this decision process, we soon realize that not all of our defense needs can be met and that we are in the position of striving to balance the resultant risks to the Nation's security. In coming to grips with this problem, the Department does not assess merely the mix of force capabilities within one Service, but works toward a balanced cross-Service capability. Therefore, a major strategic mission for the Army would not necessarily be funded in its entirety by reducing resources in Army conventional programs, but through a cross-Service balancing of requirements and resources. While as Army Chief of Staff I would prefer not to see resources for conventional programs reduced, I accept the fact that some degree of risk is inevitable in our budget and I am confident that Defense Department decisions, in which Secretary Marsh and I are full participants, achieve the best possible balance for the Nation between strategic and conventional forces.

Continental Air Defense

QUESTION: There is every probability that the Soviet Union will begin deployment of a significant number of "Blackjack" supersonic strategic intercontinental bombers later in this decade. What role does the Army have in continental air defense for the United States?

ANSWER: Air defense of the continental United States is the responsibility of Aerospace Defense Command (ADCOM). ADCOM is a specified command comprised essentially of Air Force components. The Army does not have an operational component command in ADCOM and currently has no direct role in the continental air defense of the United States against intercontinental bombers. The Army is, however, involved in research and development of ballistic missile defense systems which may play a future role in the larger issue of strategic defense.

QUESTION: Would it make sense to move ahead with an active strategic defense against ICBM's and SLBM's without building a North American air defense capable of coping with Blackjacks, Backfires, and cruise missiles?

ANSWER: No. DOD's Strategic Defense programs are focused toward improving all aspects of Strategic Defense. The Strategic Defense Initiative (SDI) addresses only one aspect: defense against ballistic missiles. Other studies and modernization programs address improving our network of air defense radars, modernizing our interceptor forces, strengthening our space surveillance capabilities, pursuing an operational antisatellite system. SDI has potential for increasing stability of rendering harmless the enemy's fastest means of attack - the ballistic missile but it cannot stand by itself. DOD's ongoing Strategic Defense Architecture (SDA) 2000 is intended to develop an integrated defense architecture that will include air, space, and ballistic missile defense.

QUESTION: There were recent published reports that our intelligence had discovered Soviet pilots flying MIG-23's practicing a maneuver known as "toss bombing" over Cuba. These reports stated categorically that this technique is only used to deliver nuclear weapons. What is your view of the state of our air defenses, both the military installations and for economic targets within the unrefueled range of MIG-23's flying from Cuba.

ANSWER: As part of the allocation of resources and prioritization of defense requirements, the strategic mission of providing air defense of the continental United States was given to the Air Force. As the Army has no forces participating in this mission, Army comments on Air Force ability to execute continental air defense would not be appropriate.

MISSILE DEPLOYMENT

QUESTION: The Army's last surface-to-air missile batteries deployed for the defense of the United States were located in Florida and were intended to cope with a Cuban threat. They were dismantled long before the current very capable MIG-23's and MIG-27's began being introduced into Cuba. Given the holes in our ground-based radar the drug smugglers exploit on a daily basis, the sporadic nature of E-3A and E-2C patrols, and the weather sensitivity of the tethered aerostats, would you support a new deployment of Army Hawk or Patriot missiles to cover Carribean Command's headquarters at Key West, or CENTCOM's headquarters at MacDill AFB, or our space launch facilities at Cape Canaveral?

ANSWER: As part of the allocation of resources and prioritization of defense requirements, the Air Force has been tasked to provide air defense of the continental United States. Although radar coverage could be improved by the addition of Army HAWK and/or PATRIOT units, the quantity of resources available restricts such measures. Existing and programmed HAWK and PATRIOT systems are heavily committed to missions involving air defense protection of US forces deployed overseas. Current and planned stationing for HAWK and PATRIOT units within the continental United States was established by FORSCOM based on availability of facilities and training areas and proximity to CONUS-based divisions and corps. By FY 89 CONUS-based HAWK units are programmed to consist of one battalion at Fort Bragg and one at Fort Hood, both committed to RDF contingency missions. The three PATRIOT battalions to be stationed at Fort Stewart, Fort Lewis and Fort Hood will be committed to support contingencies in Europe, and the remaining 1 1/2 PATRIOT battalions at Fort Bliss will be dedicated to contingencies elsewhere.

Consideration was not given to stationing PATRIOT or HAWK to provide air defense of specific installations in CONUS since this is not an Army mission. Although deployment of either system to provide air defense within the continental United States could be accomplished, it would require a change in Army and Air Force roles and missions, location and/or construction of support facilities and training areas, and either a change in defense priorities or an increase in budget and force structure to purchase and man additional units.

ANTI-TACTICAL MISSILE

QUESTION: In Europe, the Army will soon face a hard target capable, very short warning time set of Soviet nuclear missiles, including the SS-20, SS-21, SS-22, and SS-23. The Army has now embarked upon a joint development effort called the "Anti-Tactical Missile", or ATM, to allow it to defend its forces and facilities from attack by these weapons. Please describe the direction of this effort, its purposes, its timetable, and its funding requirements.

ANSWER: The Joint Anti-Tactical Missile (JATM) program is an Army-led, joint program designed to counter the Soviet tactical missile threat. This objective is to be accomplished through a combination of near-term and long-term approaches.

Near-term efforts (deleted) to the tactical missile threat.

Long-term efforts include a complete joint systems approach to define the overall concept for countering the total tactical missile threat. This approach will encompass all (d). Development of new and/or evolutionary systems will also be examined.

The purpose of the JATM program is to respond to the (d).

[Deleted]. In FY83, the Army began upgrading HAWK's potential value against cruise and tactical ballistic missiles. These efforts are continuing in FY84, as is work in the areas of threat modelling, surveillance, target acquisition and battle management in order to reach joint agreement on requirements and threat. In FY85, (deleted) test plans will be finalized and full-scale engineering development for (deleted) will commence. Concurrently, competitive concept definition for the long-term JATM system will begin. (Deleted). The joint ATM program received $10M RDTE in FY83 and $17.2M RDTE in FY 84. The RDTE request in FY85 is for $92.3M.

CHEMICAL MUNITIONS

QUESTION: Some Soviet missiles will possess chemical as well as nuclear warheads. These weapons could strike key positions and facilities in the opening moments of European war. Please describe how the Army plans to cope with the prospect of having its POMCUS sites and the airports through which it expects its REFORGER reinforcements to arrive contaminated with persistent Soviet chemical munitions.

ANSWER: Although there are plans in case POMCUS sites and airfields are attacked with chemicals, such contamination will [deleted].

The Army expects to have sufficient intelligence indicators and warning to mobilize before open hostilities begin. Thus, most if not all the REFORGER reinforcements would be expected to arrive and draw POMCUS stocks before chemical contamination becomes a problem. Once the sites are emptied they lose most of their value as targets. After units have drawn their equipment they will practice normal defensive actions such as dispersion of supplies and units.

Plans for receiving REFORGER units when contamination is present or anticipated include the use of designated alternate debarkation airfields. This alleviates but does not solve the contamination problem. Most of the civilian airport crews [deleted]. The loss of their services will greatly reduce the airfield's capacity. Many of the aircraft will be from the Civil Reserve Air Fleet (CRAF) [deleted] [deleted]. Not all airfields can be considered as alternates for the CRAF because of runway strength requirements.

Airfields that are contaminated would have to be decontaminated by assigned personnel plus Host Nation Support (HNS) assets, which are allocated for this purpose. However, decontamination assets are limited even with HNS. Decontamination is a slow, difficult process. We expect contaminated airfields to operate at a degraded level of efficiency for long periods after such attacks. As a result, many aircraft would be forced to divert to uncontaminated airfields if available. When the planes are forced to divert, the changes will result in mismatch of units versus required location. The resulting slow down will have a snowball effect on the subsequent units and their time phased deployment schedules. The overall result will be confusion and delays in reinforcement.

The DOD chemical defense capability is a significant concern. We and the rest of DOD are working to improve it. The Army is now preparing a report on chemical defense readiness posture in Europe as requested by the Committee in its FY84 report.

The best overall answer to this situation is deter the use of chemicals and prevent it from happening.

CHEMICAL PROTECTIVE CLOTHING AND EQUIPMENT

QUESTION: For a successful defense of Europe, the Army will depend to a great extent upon Host Nation Support. This is a concept under which West Germans serve in support roles for U. S. troops, providing supplies, transportation, maintenance, and other rear echelon services in wartime. To what extent are the personnel who comprise these host nation support forces provided with chemical protective clothing and equipment? What plans are there to provide them with such equipment, so they can operate in a contaminated environment to support our forces?

ANSWER: Local national military forces in support of U. S. organizations will be provided chemical protective clothing and equipment by their respective nation in the same manner as their regular armed forces. Local national civilian personnel employed by the U. S. forces, and who are considered mission essential to the war effort, will be provided the same types of chemical protective clothing and equipment as our military personnel. Currently, the United States Army, Europe has sufficient chemical protective clothing and equipment on hand to satisfy 70 percent of the local national civilian requirement. Funding has been requested to reach 100 percent of the requirement by fiscal year 1989.

LACK OF CHEMICAL PROTECTION

QUESTION: Since most of the members of these host nation support forces have families who will be living where they will be expected to serve in a support role for our forces, and since, like all normal human beings, their first instinct in time of danger will be to try to make certain their families are safe, what impact will be lack of chemical protection for their families most likely have on their willingness to stay and perform their support duties under the lash of a Soviet chemical attack?

ANSWER: The Army has plans to provide protective clothing to mission essential DA civilians and local national personnel. However, no plans exist to provide chemical protection to the civilian population of sovereign nations to which deployed during hostilities.

Conventional Defense of Western Europe

QUESTION: If our host nation support plan fails, can we reasonably expect to be able to conduct a successful conventional defense of Western Europe?

ANSWER: The defense of NATO in Europe is not dependent entirely on host nation support nor on US forces. Successful deterrence of aggression in Europe depends on all NATO forces having the demonstrable capability to implement NATO's strategy of flexible response, [deleted].

CHEMICAL WARFARE

QUESTION: Would you characterize the Army's present ability to keep fighting in a chemically contaminated environment if changes of protective clothing, messing, care for casualties, and other functions must be performed for seven days under those conditions? Fourteen days?

ANSWER: The present ability of the soldier to keep fighting in an NBC protective clothing ensemble is limited. The NBC protective clothing ensemble, consisting of an overgarment, mask with hood, gloves and overboots is bulky and cumbersome. The weight (about 9 lbs) and bulk of this clothing ensemble causes heat stress and impairs performance and mobility of the soldier. The performance of the soldier is degraded most as a result of heat stress when wearing the protective ensemble in a warm, humid environment. The chemical protective overgarment (jacket and trousers) will provide a minimum of six hours protection from CW agents, after 14 days field wear. Therefore the soldier must change his protective clothing (overgarment, overboots, gloves) within six hours after being contaminated, or after up to 14 days wear. Considering individual needs such as eating, drinking and personal hygiene, six hours protection is reasonable.

The M17A2 NBC protective mask has a drinking tube device for drinking water from a canteen while the soldier is masked. This mask drinking device is the only capability the soldier has for consuming anything in a chemical warfare fighting situation. The soldier must go into an NBC protective shelter for messing. The Army has initiated a development effort to provide a liquid nutrient food for the soldier wearing the NBC protective ensemble. The goal for fielding this liquid nutrient is FY87/88.

The Army cannot treat casualties in a chemically contaminated environment. Successful treatment of casualties requires an uncontaminated "clean" environment. The process of decontaminating casualties and getting them into the clean environment for treatment is extremely difficult. The time and resources required will mean that the casualty treatment chain will be saturated by just small numbers of wounded.

Soldiers carry nerve agent antidote injectors for self administered first aid treatment, in case of agent exposure. This self first aid is designed to reduce the severity of chemical agent casualties and is a life saving measure. The soldier is also equipped with a personal decontamiantion kit to remove contamination from the skin and personal protective gear.

In summary, we anticipate a 30 to 50 percent degradation of effectiveness if called upon to fight in a chemical battlefield. The encumbrance of the protective gear, physical and psychological debilitation and added requirements impose a severe burden on the leadership. They place an even heavier demand on an already degraded command, control, communication, logistic and casualty treatment systems. This leaves units in an untenable position of putting most of their effort into sustaining themselves rather than defeating the enemy. If an enemy is not forced to adopt similar protective measures by the threat of reprisals with chemical weapons, the asymmetry in force effectiveness calls into question our ability to sustain effective operations on the battlefield for 14 days.

STOCKS OF PROTECTIVE MATERIAL

QUESTION: How does the Army's stock of protective shelters, extra sets of protective clothing and filters for masks compare with its requirements in Europe if the Soviet Union were to make massive use of its chemical arsenal? Have you taken into account destruction of prepositioned stocks in Europe due to Soviet attacks, and interruption of supply lines which would likely result from the impact on German civilian society and the host nation support structure of widespread use of Soviet chemical weapons?

ANSWER: The Army is prepositioning war reserve stocks of chemical protective clothing (overgarments, overboots, gloves), and filters for masks in Europe. Current stocks of these NBC items are filled at about [deleted] of Europe's theater requirement objective and should be completed in (d) War reserve stocks of chemical protective clothing are also [deleted] maintained in the CONUS, for Europe wartime requirements. These CONUS stocks take into account the possible destruction of chemical protective clothing stocks in Europe due to Soviet attack. The Army does have plans to equip mission essential host nation support personnel with chemical protective clothing.

The Army has plans to store war reserve stocks of NBC collective protective shelters in Europe. Sufficient assets of M51 NBC collective protective shelters are available, and distribution for war reserves should be completed in [deleted].

STOCKS OF PROTECTIVE MATERIEL

QUESTION: In Europe, how many changes of chemical protective clothing and protective mask filters are kept on hand as part of a company-sized unit's basic load?

ANSWER: In any company, regardless of type, there are two sets of chemical protective clothing and protective mask filters on hand in the unit basic load. In addition, there is one set on hand which is utilized for training.

QUESTION: At what level in the Army's supply system and at what typical distance from the forward line of troops will additional supplies of chemical protective clothing and mask filters be found?

ANSWER: Above the company, the next level at which stockage of chemical protective clothing and mask filters can be found is in theater war reserve stockage.

[Deleted].

QUESTION: Do you believe the Soviet Union would place a high priority on previously locating and promptly destroying stocks of spare chemical protective clothing and equipment in the opening hours of a European war if they had decided to use chemical munitions themselves? Do you believe they have already located and targeted such stocks.

ANSWER: Yes to both questions. The Soviets emphasize simultaneous attacks at the FEBA and in rear areas.

[Deleted].

The Soviet Union is the best prepared nation in the world for offensive use of and/or defense against chemical and biological weapons. NATO, on the other hand, is not as well prepared for such operations. Loss, damage or contamination of chemical protective stocks would further degrade NATO's chemical warfare defense capability.

Soviet forces would enjoy a significant advantage if chemical protective clothing and equipment stocks were damaged or destroyed.

NATO DOCTRINE

QUESTION: General Bernard Rogers, in an interview published in "The Army Times" last year, stated that NATO doctrine did not envision any penetration which was not necessitated by immediate tactical considerations into Eastern Europe in the event of war with the Warsaw Pact, and that any territory capture would not be held. He clearly said this to ease European fears that the U.S. was converting to a posture for attacking the Warsaw Pact, since the peace movement was then involved in the height of its efforts to stop the Pershing II and GLCM deployments. However, this is now declaratory doctrine. Please discuss the deterrent effect this declaratory doctrine has when compared with alternate approaches to the problem involving taking as much of the battle to Pact soil as possible.

ANSWER: Our potential military actions in Europe must be guided by NATO's strategy of flexible response. This strategy requires a measured response in the employment of force to foster uncertainty in the mind of a potential aggressor as to the means by which NATO would respond to his aggression. NATO's flexible response strategy does not preclude the use of interdiction systems to engage Warsaw Pact follow-on forces so that we create operational depth on Pact soil. In fact, NATO's doctrine of Follow On Forces Attack (FOFA) envisages deep interdiction. NATO political and military guidelines do not permit, however, unconstrained maneuver operations to seize and hold Pact territory. General Roger's statement is in line with this strategy. We believe that our AirLand Battle doctrine is compatible with this strategy and supports NATO's deterrent and defensive missions. We see our doctrine and NATO's flexible response strategy as having a significant deterrent effect.

NATO Doctrine

QUESTION: Again having reference to the Rogers interview, another point was that we should not threaten to overthrow the governments of the Soviet Union's Eastern allies in the event of a war with them. As I understand military strategy, the idea is to attack the enemy at his weakest point, not his strongest point. Correct me if my impression is wrong, but is not our current NATO doctrine focused on fighting the Warsaw Pact's strength, its conventional military forces, while making the conscious decision to substantially ignore the Pact's most vulnerable point, the political unreliability and instability of the governments of its non-Soviet members?

ANSWER: US strategy for war in Europe is wedded to the concept of "coalition warfare" referred to by GEN Rogers in the Army Times interview. This concept results from our participation in NATO and an inexorable commitment to pursue military objectives in concert with our European allies. The inviolability of this commitment requires adherence to guidance and plans defined collectively by members of the NATO alliance. In general, these plans call for maintaining existing national boundaries, or restoring them, should Soviet/Warsaw Pact offensive actions occur. Successful accomplishment of this objective may require the attack of Pact follow-on ground formations. Permanent seizure of Warsaw Pact territory is not in consonance with US goals and objectives. However, it is conceivable that operations may be conducted to exploit the politically unreliable non-Soviet Warsaw Pact countries. These operations are planned as a practical adjunct to the overall plan and would be intended to support the objectives and basic mission of the NATO alliance.

DEFENSE OF WESTERN EUROPE

QUESTION: In many ways, reading the Rogers interview brought sharply to mind the policy failures which caused, in my view, our defeat in Vietnam. Here again we see concessions made and guarantees extended which impose drastic limits on military action. Worse, the deterrent effect of declaratory doctrine is completely nullified. How do you feel about the impact of these limits on our ability to successfully defend Western Europe, assuming this declaratory doctrine would not be abandoned in wartime?

ANSWER: General Rogers' comments were not declaratory doctrine but a statement of the ideas contained in NATO military and political guidelines. All wars have limits, and Clausewitz's dictum that military actions must be subordinate to political aims has been the foundation upon which our use of the military instrument is built. The NATO guidelines represent an Alliance concensus to which we adapt our doctrine. The purpose is foremost to deter war, which we have successfully done for almost forty years. If deterrence fails, we will operate within the NATO political and military guidelines to defend ourselves alongside our Allies.

SOVIET OPERATIONAL MANEUVER GROUPS

QUESTION: These are striking parallels between the shallow, rigid, reserves-poor defense Hitler forced upon his commanders in in the east in World War II, and the kind of conventional defense political realities force upon NATO today. The Soviet Union developed tactics and operational methods to defeat Hitler, and they appear to be resurrecting some of these same concepts today. The Operational Maneuver Group is a case in point. Current Soviet doctrine is aimed at fighting the decisive battles in the rear of NATO's front lines. What is your evalution of NATO's present ability to cope with Operational Maneuver Groups, Soviet dessant forces of all sorts (paratroops, airmobile, spetnatz, etc.), and infiltration tactics on a wide front by mobile armored forces? (All of this while concentrated Soviet armor hammers at the main objective of the Soviet attack).

ANSWER: The Office of the Secretary of Defense is preparing for the Committees on Armed Services of the Senate and House of Representatives a report and plan for improving the conventional defense capabilities of NATO. This report is due in May 1984 and will provide the assessment of NATO's capabilities that you desire.

MILITARY POLICE

QUESTION: Do you believe that the current force structure of military police in the division and corps will be sufficient to cope with the rear area protection mission in the NATO environment projected in the preceding questions?

ANSWER: Based on our doctrine, military police organizations have been designed and equipped to handle their portion of the Rear Area Protection (RAP) mission. AirLand Battle doctrine makes the commander responsible for all three portions of the battlefield; deep (forward of the forward line of own troops (FLOT)), close-in, and rear. Within their respective areas, division or corps, military police (MP) units provide Rear Area Combat Operations (RACO) support and response forces to the divisions or corps in order to defeat level I (agents, sympathizers, and terrorists) and level II (enemy tactical units of less than battalion size) enemy forces. For level III (enemy forces of battalion size or larger) the echelon commander allocates combat forces to handle enemy forces beyond the capability of MP forces. It should be noted that, like other types of forces, including combat forces, resource constraints preclude fielding the total number of corps MP companies required in the force structure.

QUESTION: Do you believe that our military police are presently equipped to combat the elite Soviet forces they are likely to encounter in a rear area protection role?

ANSWER: No, not presently, but we do have the equipment programmed that will provide enhanced capability. The equipment required to enhance MP combat capability includes:

1. The MK19 MOD 3 40mm Grenade Machinegun. This weapon will provide MPs with some anti-armor capability as well as provide outstanding anti-personnel capability. MP units will receive these starting in FY 85.
2. The High Mobility Multipurpose Wheeled Vehicle (HMMWV). MPs will use this vehicle as a weapons platform for the 40mm grenade machinegun in division, corps, and security companies. HMMWVs will start being fielded in FY 85.
3. The Position Location Reporting System (PLRS). PLRS is a computer based system which provides location and navigation information. Each MP squad will have a PLRS. Fielding will start in FY 87.
4. The Squad Automatic Weapon (SAW). The SAW is a 5.56mm light machinegun. Each MP team will be equipped with one SAW starting in FY 84.

QUESTION: What will happen if our division or corps commander have to divert line combat units to assist the military police in the rear area protection mission in the midst of heavy combat?

ANSWER: Our AirLand Battle doctrine calls for corps and division commanders to ochestrate the deep and rear portions of the battle in conjunction with maneuver by combat units to win the all-important close-in battle. In that regard, the commander does not divert combat units from the close-in battle to assist in rear area operations if that action may endanger the organization's ability to succeed in the close-in battle. The commander uses a system of graduated response in rear area combat operations using combat support and combat service support units, allied and host nation units, and combat units out of contact before employing engaged combat forces. Only when there is a significant threat to the maneuver of his close-in combat units will the commander employ combat units in rear area combat operations.

CAPSTONE PROGRAM

QUESTION: General Wickham, Do you believe that the CAPSTONE Program has been successful?

ANSWER: Yes. CAPSTONE is providing the Total Army with a way for all units to identify with their wartime missions. Now for the first time, Reserve Component units are being told where they are going to fight, who they will be expected to support and for which command they will be working. As a result, commanders can now enter into comprehensive planning and training associations with the units they can expect to fight along side.

RESERVE COMPONENT TRAINING

QUESTION: Do you believe that the present training program for our Reserve Component units is adequate -- should the one weekend drill a month and two weeks of active duty for training in the summer be increased, especially for high priority units?

ANSWER: The current program is, on the average, the best balance between training demands and the recruitability and retention of the citizen-soldier. However, the Total Army needs the flexibility to increase training times in response to specific demands and missions.

The Army has recognized this requirement and has several programs to increase proficiency and readiness of selected personnel and units. These programs address a variety of issues. Examples of our efforts in this area are: New Equipment Training provides additional drills for units receiving equipment, such as the M-1 or M60A3 tank. Overseas Deployment Training (ODT) provides realistic in-country training to RC units scheduled to deploy in support of overseas contingency plans. Many units when participating in ODT conduct three weeks of Annual Training (AT). In addition, RC roundout units scheduled for training at the National Training Center (NTC) conduct three weeks of AT. Special training such as the ARNG Key Personnel Upgrade Program and the USAR counterpart training program offers selected individuals additional training opportunities with the Active Component (AC).

Individual members of the RC, their families, and their employers generally support this additional training time if proper advance notice is given and if prolonged AT periods are not an annual requirement. The effect on retention within the RC must be carefully considered when any additional training is planned.

INTEGRATION OF RESERVES INTO ACTIVE FORCE

QUESTION: Do you feel that the Air Force's approach to integrating its Reserve Components with its Active forces during peacetime has any lessons in it for the Army?

ANSWER: Yes. The Army staff is currently working with the Air staff reviewing its Reserve Component Associate Flight Crew Program. We are looking at several possible program variants for adoption by the Army. It should be recognized, however, that the Air Force Reserve component program has several unique facets that are not exportable to the Army. For example, RC squadrons and wings participating in the Air Force Reserve Associate Crew Program are located with Active Duty units on AC installations. In general, RC Army aviation units are not located in the general proximity to Active duty installations. The Army is continuing the staff analysis of USAF Reserve program elements to determine applicability for Army aviation units.

MANNING HIGH PRIORITY RESERVE UNITS

QUESTION: General Wickham, Should there be a high proportion of active duty full-time personnel in high priority reserve units?

ANSWER: High Priority Reserve Component units require a greater proportion of full-time unit support personnel to enable these units to meet their early deployment times. The key to meeting early deployment times for Reserve Comonent units is to reduce post-mobilization training time to the minimum through more productive training on weekends and during the two week annual training period. Full-time unit support personnel accomplish this by performing maintenance, administrative and planning duties during the week to permit the unit to train more efficiently during the weekend drill periods. Greater efficiency during the inactive duty training year then leads to improved training during the annual training period. Additionally, full time unit support personnel develop the expertise necessary to field new equipment expeditiously and conduct the detailed planning necessary to meet mobilization timelines.

ROLE OF CIVIL AFFAIRS UNITS

QUESTION: The Grenada operation highlighted, in its aftermath, the contribution made by the Army's civil affairs units. Please describe the role played by these specialists in the Grenada operation.

ANSWER: The civil affairs mission in Grenada was to help prevent the civilian population from interfering with the military operations, to provide emergency humanitarian assistance and help to repair war--related damage to public facilities and private property. In addition, the civil affairs mission was to support the efforts of the US Ambassador and the United States Agency for International Development (USAID) to carry out US programs to help the civilian sector and Grenadian Government return to normal.

QUESTION: What are your plans for civil affairs in the Army force structure of the future?

ANSWER: The present civil affairs structure is currently being scrutinized with a view towards making it capable to meet valid civil affairs requirements in support of US defense objectives through the year 2000.

QUESTIONS SUBMITTED BY SENATOR PROXMIRE

TURBULENCE IN THE ARMY

QUESTION: There has been a lot of concern expressed recently about turbulence in the Army. How many people are in transit in the Army on any given day and how does this compare to previous years?

ANSWER: The Army Manpower Program is the Army tool for tracking and projecting, by month, individuals who are in transit status. A historical summary using annual averages against an end strength of approximately 780,000 soldiers are portrayed below:

	AVERAGE INDIVIDUALS IN TRANSIT (1)
FY 80	25,500
FY 81	24,800
FY 82	27,200
FY 83	24,600 (2)
FY 84	22,800 (2) (3)

NOTES: (1) SOURCE: Army Manpower Program--Training, Transient, Holdee, Student (TTHS) Forecasting System.

(2) Includes accounting change which accounts for reduction of approximately 500 in FY 83 and 1800 in FY 84.

(3) Projection as of the FY 85 Presidential budget submit.

AVERAGE TOUR OF DUTY

QUESTION: What is the average tour of duty for an officer today compared to previous years.

ANSWER: The average tour of duty of officers, at the three highest density locations, is portrayed below:

AVERAGE TIME ON STATION/TOUR LENGTH (MONTHS)

	CONUS	EUROPE	KOREA
FY 80	31	31	13
FY 81	30	31	13
FY 82	31	31	13
FY 83	32	34	14

RECRUITING GOALS

QUESTION: Has recruiting been adversely affected by the downturn in unemployment and do you project that you can meet your recruiting goals even in an improved economy with lower unemployment?

ANSWER: High correlation exists between unemployment and recruiting success. This correlation is now becoming apparent to the Army recruiting force. Through the 1st Qtr FY 84 the number of all male test category I-IIIA applicants taking the qualification test for the first time for the Active Army decreased 22 percent from the same period last year. New entries into the Delayed Entry Program for male high school seniors and diploma graduate test category I-IIIA are down 11 percent for this period. The Army believes it can meet its quantitative objectives in FY 84 and through internal reprogramming of resources, achieve quality goals. In the Army's opinion, the FY 85 recruiting outlook is tenuous. As the economy improves and youth unemployment declines, there will be increased competition for high quality youth. The Army believes continued Army recruiting success is contingent on maintaining advertising and bonus programs, and development and maintenance of incentives programs such as the Army College Fund. In the Army's judgement, funding support for the Army's strategy must be based on the fact that the Army requires the largest share of the Department of Defense accessions, and must, to meet its manpower needs, continue to increase the propensity of quality youth to join the Army.

QUESTION: Do you have the flexibility to over-recruit in good years to in effect "stockpile" bodies for those years which will be more difficult?

ANSWER: No in that the Army has specific needs for specific skills at specific times. Stockpiling, if it could be done, would not be prudent management. Associated problems range from "face/space" misalignment in units to shortages of facilities, training resources and equipment. Costs associated with maintaining stockpiled soldiers would, in all probability, exceed the additional recruiting cost in lean years.

BASE CLOSURES

QUESTION: Do you have a list or could you draft a list of bases in the United States that could be closed without any impairment of military capability but with documented cost savings?

ANSWER: The Army does not maintain a base closure list. The current base structure is the result of significant reductions during the past twenty years. These reductions have left the Army with a manageable group of installations which offers little in the way of closure candidates. The utilization of Army installations is the subject of periodic evaluations. Any installation which is no longer required is either inactivated for future mobilization needs or declared excess to the Army's needs and is reported to GSA for further disposition. Documented cost savings which could be derived from a base closure are not maintained unless an installation is under study for disposal. To achieve these cost savings, it is important to recognize that significant initial costs, requiring congressional approval, are frequently involved and the ensuing savings are usually not achieved for several years.

PERCENTAGE OF BLACKS

QUESTION: What is the percentage of blacks in the enlisted ranks as opposed to officers? What percentage of general and field rank officers are black and what are the 5-year trends?

ANSWER:

1. 31.02 percent of the enlisted ranks of the Active Army, as of 31 December 1983, were black.

2. 9.30 percent of the commissioned officers in the Army, as of 31 December 1983, were black.

3. The 5-year trend for black general and field officers follows:

PERCENTAGE OF GENERAL AND FIELD OFFICERS WHO ARE BLACK
(As of 30 September, each Fiscal Year)

	FY 79	FY 80	FY 81	FY 82	FY 83
General Officers:	5.2	5.5	5.8	6.3	5.6
Field Officers:	4.8	4.6	4.7	4.8	4.9

QUESTIONS SUBMITTED BY SENATOR CHILES

LIGHT INFANTRY DIVISION

QUESTION: The Army's primary mission is in Europe fighting a highly mobile, heavily mechanized armored threat. The Army currently has in its active force ten heavy divisions and six light divisions. While you may gain strategic mobility with this move you limit tactical mobility when you arrive along with sustainability. The Light Infantry Division (LID) would arrive at its destination with two days supply and would then become heavily dependent on airlift for resupply. How do you intend to address this problem? Delineate the use of limited lift assets to resupply the LID in a multiple contingency scenario.

ANSWER: Although the Army's primary mission is defense of NATO alongside our allies, forces must also be structured for deterrence across the spectrum of conflict and must be prepared to respond to other threats to U. S. interests anywhere in the world. This requires a balance of forces, both heavy and light. While heavy forces are structured, trained, and equipped to counter the major conventional warfare portion of the spectrum of conflict, our light forces are best suited for quick reaction - low-intensity scenarios which have historically characterized the use of landpower since World War II. Although the Light Division has greatest utility as a contingency force at the low-end of the conflict spectrum, it can be employed in mid-intensity scenarios such as NATO, when augmented, as part of a Corps, alongside heavy forces. Augmentation is based on such considerations as mission, threat, terrain, and theater of employment. The Light Division command structure is designed to accept these particular augmenting units. Corps augmenting units will be composed of combat, combat support, and combat service support units to provide a range of options for greater firepower, tactical mobility, or supportability. In its pure form, the Light Division requires only a third of the strategic mobilty assets of a current infantry division and can close in an objective area in four days, compared with twelve and one-half days for a current infantry division. The Light Division will have 48 hours sustainability when it deploys (compared with five days for a current infantry division). Follow-on sorties will be required to provide logistics sustainment. However, any divisional deployment requires follow-on logistics support as well as Corps level combat service support units. The tremendous savings in C141B sorties required to deploy the Light Division, and the fact that the total logistics support requirements will be less (fewer people and less heavy equipment), allows for the optimization of limited lift assets in multiple contingency scenarios.

QUESTION: Our present land force design has 14 heavy and 15 light Active and Reserve divisions. If the real threat is the Soviet Union, which we have been led to believe possesses superior armored assets, do we really need another light division with a diminished anti-armor capability to address that threat? Aren't the current 6 light divisions sufficient to handle the threat?

ANSWER: The figure for 1985 is actually 14 heavy and 12 light Active and Reserve divisions in the Army. The threat is not only directly from the Soviet Union, but also from the Third World, the aggressive Soviet use of surrogates, and the increasing use of terrorism as an instrument of foreign policy. The Army must be able to respond to these other threats to U. S. interests anywhere in the world. In that regard, the Army has insufficient forces to do all that it might be called upon to do, in an increasingly hostile world. With the smallest Army since 1950, and almost 43 percent of forces forward deployed, the commitments are heavy. The Army's Light Force Initiative should be viewed as the next step in an evolutionary effort toward total force modernization. The modernization of light forces is a recognition of the continuing need for a more immediate, flexible, credible, deterrent capability.

NEED FOR ANOTHER DIVISION

QUESTION: Finally, why do we need a 17th Division? On 3 February 1981, in DOD authorization testimony before the Senate Armed Services Committee, Army Secretary Marsh and then Army Chief of Staff, General Meyer stated that, "The active end-strength of 786,000 would not support our 16 Division force structure. We now have an imbalance in our active forces with undermanned battalions and inadequate active support structure." The current Army budget states that the FY85 request "does not correct the combat to support imbalance." If the light infantry division is a good idea, then why not use the personnel assets created by a smaller and lighter division, to redress this problem?

ANSWER: The addition of a 17th Active Component Division increases our conventional forces capability and provides a real increase in our deterrent posture toward the more likely postulated scenarios. This increase in capability will likely prevent the escalation of a low-intensity conflict into major conventional warfare which would require a full complement of supporting forces. The Army has simultaneously embarked on an innovative effort to reshape support forces. For example, since 1981 the Reserve Components have assumed many of the previously identified support shortfalls. Other efforts are underway aimed at taking advantage of new technologies, and enhancements of unit productivity, as well as better usage of external resources, e.g., host nation support. These efforts should result in an improved combat to support balance. The activation of a 17th Division is part of a fabric of decisions (light force modernization and heavy force refinements) aimed at increasing our total capabilities within realistic resource constraints. Since the 17th Division grows incrementally over a period of three years, very few spaces are available in FY85. A decision not to activate a 17th Division would require the complete reexamination of the force structure and would undoubtably result in less overall capability.

QUESTIONS SUBMITTED BY SENATOR HUDDLESTON

CENTRAL AMERICA

QUESTION. What steps are being taken or are needed to protect against repetition of the shootdown of the Army helicopter on the Honduras-Nicaragua border? What lessons have been learned from that incident?

ANSWER. As you know, the pilot made a navigational error due to confusing terrain, his relatively low incountry experience level (45 hours), and possible wind drift caused by 25 to 30 knot winds at altitude. The lack of positive flight following and control procedures along established routes with mandatory checkpoints created a situation which allowed the navigational error to go undetected by the pilot or by controlling agencies. The investigation of the incident also revealed that the pilot did not receive a weather briefing. Moreover, the flight plan was not forwarded to the destination airfield. As such, there was no arrival time from which to base an overdue aircraft decision to initiate search and rescue. Finally, there was no requirement that the buffer restriction along the border be marked on aviator's maps.

Since the incident, positive flight following and control procedures have been implemented and continue to be refined. Routes now include mandatory reporting checkpoints and navigation aids which augment pilot navigation to enable pilots to cross-check positions. The requirement for weather briefings has been reemphasized and take off times are being adjusted accordingly until receipt of weather briefs. Remote sites are being apprised of the requirement to notify destination airfields of incoming aircraft and estimated arrival times. Procedures have been instituted to insure that all facilities involved with flight plans understand and execute their responsibilities with regard to flight operations. Lastly, all maps used for aviation operations are being marked to show the five nautical mile buffer zone.

QUESTION. What plans exist that could be implemented if the President decided to use US military force to replace the Sandinista Government in Nicaragua with a non-Marxist regime? What would be the main obstacles to successful accomplishment of such a mission?

ANSWER. There are no plans for the use of military force to replace the Sandinista Government in Nicaragua.

GRENADA OPERATIONS

QUESTION: In the Grenada operation, the military apparently did not make use of all the available intelligence products. Please explain why significant intelligence products were not used by the military in the Grenada operation?

QUESTION: In the Grenada operation, the military apparently did not make use of all the available intelligence products. Please explain why significant intelligence products were not used by the military in the Grenada operation?

ANSWER: [Deleted].

The Army is conducting an in-depth study of the Grenada Operation. This study will recommend actions the Army should take to benefit from the lessons learned in the operation.

JOINT SPECIAL OPERATIONS AGENCY

QUESTION: What is the Army's role in the new Joint Special Operations Agency? Please explain fully all significant aspects of the Joint Special Operations Agency.

ANSWER: The Army has no role *per se* in the new Joint Special Operations Agency (JSOA), since that is an agency solely of the Organization of the Joint Chiefs of Staff. However, when the Army's interests are involved in an issue being handled by the Joint Special Operations Agency, the Army interacts as it would with any Joint Agency. An explanation of JSOA's workings would be better provided by JSOA itself.

SPECIAL OPERATIONS

QUESTION: Please describe the composition and mission of each element of the Army having special operations responsibilities. Explain how each of these elements fits into overall U.S. special operations capabilities.

ANSWER: The definition of special operations is those operations conducted by specially trained, equipped and organized forces against strategic or tactical targets in pursuit of national military, political, economic, or psychological objectives. These operations may be conducted during periods of peace or hostilities. They may suppport conventional operations, or they may be prosecuted independently when the use of conventional forces is either inappropriate or infeasible.

The largest slice of the Army's Special Operations Forces is formed by the three Active Component and four Reserve Component/ National Guard Special Forces Groups. (A fourth Active Component Group is currently being formed.) The major Special Forces missions are foreign and internal defense, unconventional warfare, strategic intelligence, and direct action. Special Forces Groups are oriented toward particular geographical areas, and receive area-peculiar environmental, language, and cultural training so as to best accomplish their four major missions when deployed to their respective geographical areas. Because emphasis is placed on independent operations by all Special Forces units, a unit as small as twelve men or fewer could be sent to perform a mission.

A far smaller slice of Army Special Operations Forces is formed by the psychological operations units. There are one Active Component group of three battalions and a Reserve Component element of three groups, nine battalions, and twenty-two companies, all with the mission to influence a designated target audience, in peace or war, using all available communications media. These units would be used, for example, to degrade the morale of an enemy's armed forces or his civilian population, or to encourage resistance to an occupying power in a foreign nation.

There are other Special Operations Forces whose nature and missions could best be explained in a more restricted fashion than would be provided by inclusion here.

COUNTERTERRORISM

QUESTION: Please describe the composition and mission of each element of the Army having counterterrorism responsibilities.

ANSWER: This item is of a special access nature. The response to this question is being forwarded to Senator Huddleston through appropriately cleared personnel of the Defense Appropriations Subcommittees.

QUESTION: Explain how each of these elements fits into overall U.S. counterterrorism responsibilities.

ANSWER: This item is of a special access nature. The response to this question is being forwarded to Senator Huddleston through appropriately cleared personnel of the Defense Appropriations Subcommittees.

QUESTION: What plans and interagency agreements exist for the use of military force for counterterrorism purposes within the United States? Does such action require personal approval by the President and agreement by the FBI that civilian capabilities are inadequate?

ANSWER: A Memorandum of Understanding (MOU) between the Department of Defense, Department of Justice and the Federal Bureau of Investigation, entitled "Use of Federal Military Force in Domestic Terrorist Incidents," became effective on August 5, 1983. The procedures outlined in the MOU are based on the Interdepartmental Action Plan for Civil Disturbances, dated April 1, 1969.

The Attorney General has the responsibility for the management of the Federal response to acts of terrorism in the United States and the FBI is the lead federal agency within the Department of Justice (DOJ) for the operational response to a terrorist incident.

DOJ will immediately notify DOD when a terrorist incident has occurred with a potential for military involvement. DOD may dispatch military observers to the incident site upon mutual agreement of DOD and FBI to appraise the situation before any decision is made to commit federal military forces.

When the local Special-Agent-in-Charge (SAC) of the FBI anticipates that federal military assistance will shortly become necessary because the scope of the incident exceeds the FBI capability, he will promptly notify the Director of the FBI who in turn will advise the Attorney General. After consultation with the Director of the FBI and the Secretary of Defense, the Attorney General will advise the President whether the incident warrants the employment of federal military forces.

If the President approves the use of military force, he will sign an appropriately drawn Proclamation and Executive Order provided by the Attorney General. Although the Attorney General has the statutory authority to request the assistance of military forces for certain law enforcement purposes, military forces will not be committed without Presidential approval.

All military preparations and operations, including the employment of military forces at the scene of a terrorist incident, are the primary responsibility of the Secretary of Defense. These responsibilities are carried out principally through the Department of the Army, since the Secretary of the Army is the DOD Executive Agent for such matters under the provisions of the MOU.

INTELLIGENCE SUPPORT ACTIVITY

QUESTION: Please describe the composition and mission of the Intelligence Support Activity (ISA), any activity conducted by the ISA during the past year, and any current or planned ISA activity.

(This is a compartmented activity; detailed information is being provided to the committee staff.)

RECRUITING AND REENLISTMENT

QUESTION: To what extent has there been a decline in Army recruitments and career reenlistments? What impact has it had? Are new incentives needed?

ANSWER: Reductions are now being seen in the number of applicants taking the Armed Forces Qualification Test and entering the Delayed Entry Program. However, with the aid of some internal reprogramming current enlisted accession and retention goals are being met. The Army requires the requested incentives in the FY 85 budget, to include the extension of enlistment and reenlistment bonus programs beyond the 30 September 1984 termination date.

INTELLIGENCE SPECIALIST POSITIONS

QUESTION: What is the extent of the shortfall in intelligence specialist positions, and what can be done about it?

ANSWER: The current personnel status for the Intelligence Community by Commissioned, Warrant Officer, and Enlisted soldiers are summarized below:

Officer Specialty Codes (SC)

SC	TITLE	AUTHORIZATIONS	ASSIGNED STRENGTH	PERCENT
35	Military Intelligence	3075	3155	102.6
36	Counter Intelligence--Signal Security and Human Intelligence	917	695	75.8
37	Signal Intelligence--Electronic Warfare	1163	1005	86.4

SOURCE: Month End December 1983, DAPC 123 Report: Officer Inventory by Command.

Warrant Officer

MOS	TITLE	AUTHORIZATIONS	ASSIGNED STRENGTH	PERCENT
961A	Counter Intelligence Technical	53	55	103.8
962A	Imagery Interpreter Technical	69	64	92.7
964A	Order of Battle Technical	86	76	88.3
	MOS 96 Military Intelligence	208	195	93.8
971A	Counter Intelligence Technical	410	269	65.6
972A	Area Intelligence Technician	100	51	51
973A	Interrogation Technical	149	80	53.7
	MOS 97 General Intelligence	659	400	60.7
982A	Traffic Analysis Technical	155	100	64.5
983A	Eman Analysis Technical	71	41	57.7
984A	Morse Intercept Technical	22	19	86.3
985A	Non-Morse Intercept Technician	14	17	121.4
986A	Emit Location/Identification Technician	16	19	118.8
988A	Voice Intercept Technician	55	46	83.6
	MOS 98 Signal Intelligence/ Electronic Warfare	333	242	72.7

SOURCE: Month End December 1983, DAPC 123 Report: Officer Inventory by Command.

Career Management Field (CMF) 33 Electronic Warfare/Intercept Systems Maintenance

MOS	TITLE	AUTHORIZATIONS	OPERATING STRENGTH	PERCENT
33S	Electronic Warfare/Intercept Systems Repairman	1226	1152	93.9
	Total CMF 33	1226	1152	93.9

Career Management Field (CMF) 96 Military Intelligence

MOS	TITLE	AUTHORIZATIONS	OPERATING STRENGTH	PERCENT
17K	Ground Surveillance Radar Crewman	1494	1518	101.6
17M	Remote Sensor Specialist	41	66	160.9
96B	Intelligence Analyst	2445	2072	84.7
96C	Interrogator	787	486	61.7
96D	Image Interpreter	561	527	93.9
96H	Aerial Sensor Specialist (OV-ID)	98	83	84.7
96Z	Intelligence Senior Sergeant	56	52	92.8
97B	Counter Intelligence Agent	1033	809	78.3
97C	Area Intelligence Specialist	155	47	30.3
	Total CMF 96	6670	5660	84.8

Career Management Field (CMF) 98 Electronic Warfare/Cryptologic Operations

MOS	TITLE	AUTHORIZATIONS	OPERATING STRENGTH	PERCENT
05D	Electronic Warfare/Signal Intelligence Emitter Indentification/Locator Specialist	409	471	115.1
05G	Signal Security Specialist	718	687	95.7
05H	Electronic Warfare/Signal Intelligence Intercept--International Morse Code	1616	1705	105.5
05K	Electronic Warfare/Signal Intelligence Non-Morse Interceptor	805	1119	139.0
98C	Electronic Warfare/Signal Intelligence Analyst	2204	2173	98.6
98G	Electronic Warfare/Signal Intelligence Voice Interceptor	2342	2278	97.3
98J	Electronic Warfare/Signal Intelligence Non-Communication Interceptor	1000	818	81.8
98Z	Electronic Warfare/Signal Chief	303	250	82.5
	Total CMF 98	9397	9501	101.1

SOURCE: Month End December 1983, COPO 45 Report: Enlisted Strength Inventory.

Officer shortages in SC 36 and 37 are primarily in the captain and major grades with overages at the lieutenant grade. To provide some relief in the officer arena, Force Alignment Plan (FAP) II was approved in 1982 with implementation targeted in FY 84. Its objective was to write down a total of 3600 field grade positions for Military Personnel Center (MILPERCEN) managed officers to the company grades. These 3600 positions are to be filled by captains, while 2400 positions formally filled by captains would in turn be filled by lieutenants.

The Army also changed its accession methodology to fill all lieutenant authorizations and provide flexibility to change officer specialties to fill the Army's needs at the grade of captain. This initiative will provide a larger population to grow into and meet the current shortfall at the captain and major grades while concurrently meeting the larger lieutenant needs resulting from Force Alignment Plan II.

Shortages in the Warrant Officer inventory exists primarily due to a shortage in the Top 5 of intelligence MOS which feed into the Warrant Officer MOS. The current trend in Top 5 is improving with a get well date projected to be in FY 85. This improving trend and Force Alignment Plan I initiatives combined with the career management field restructuring proposals will significantly contribute to improving our Warrant Officer shortages.

Force Alignment Plan I is an initiative to balance CMFs through promotions, Selected Reenlistment Bonuses (SRB) and reclassification. Intelligence skill NCO content has increased by 2599 since the end of FY 81; however, requirements have increased by 2342. Historical data is portrayed below:

	REQUIRED	ON-HAND	SHORTAGE
FY 81	10588	8510	-2078
FY 82	11061	9576	-1485
FY 83	11780	10727	-1053
FY 84 (Jan)	12930	11109	-1821

Historically, there has been a shortage of skilled linguists to fill linguist positions (96C, 98C, 98G) in military intelligence. Shortages and retention problems associated with these skilled linguists requirements are projected to improve. On-going efforts are being implemented by MILPERCEN to increase recruiting for linguists, provide recognition and refine training requirements and projections. Correspondingly, the Office of the Chief of Staff for Intelligence (OACSI) has developed incentive pay proposals to improve retention.

The Army is reviewing the current enlisted intelligence personnel structure for CMF 33, 96 and 98 to help cure shortages in the Top 5 content, provide better career progression, promotion opportunities, and improve standards of grades authorizations (SGA). Restructuring of CMF 33 was approved 13 Jan 84 with implementation beginning 1 Sep 84.

BRADLEY FIGHTING VEHICLES

QUESTION: What function does the Bradley Fighting Vehicle have that is not adequately performed by other means? What specific changes in the Warsaw Pact threat is this vehicle intended to counter? Could that threat be met by other means?

ANSWER: The Bradley Fighting Vehicles provide the functions noted in the chart below:

Requirement	Vehicle Capability
-Accurate Suppressive fire on the move	-Stabilized Turret
-Overwatch Fire for Offense and Defense	-25mm Gun, TOW and 7.62mm Coax
-Defeat BMP at Long Range	-TOW
-Cross-Country Mobility	-Compatible with M1
-Improved Armor Protection	-Spaced Laminate Armor
-Squad Fights from Under Armor	-Firing Port Weapon
-Fight Day, Night and All Weather	-Thermal Sight

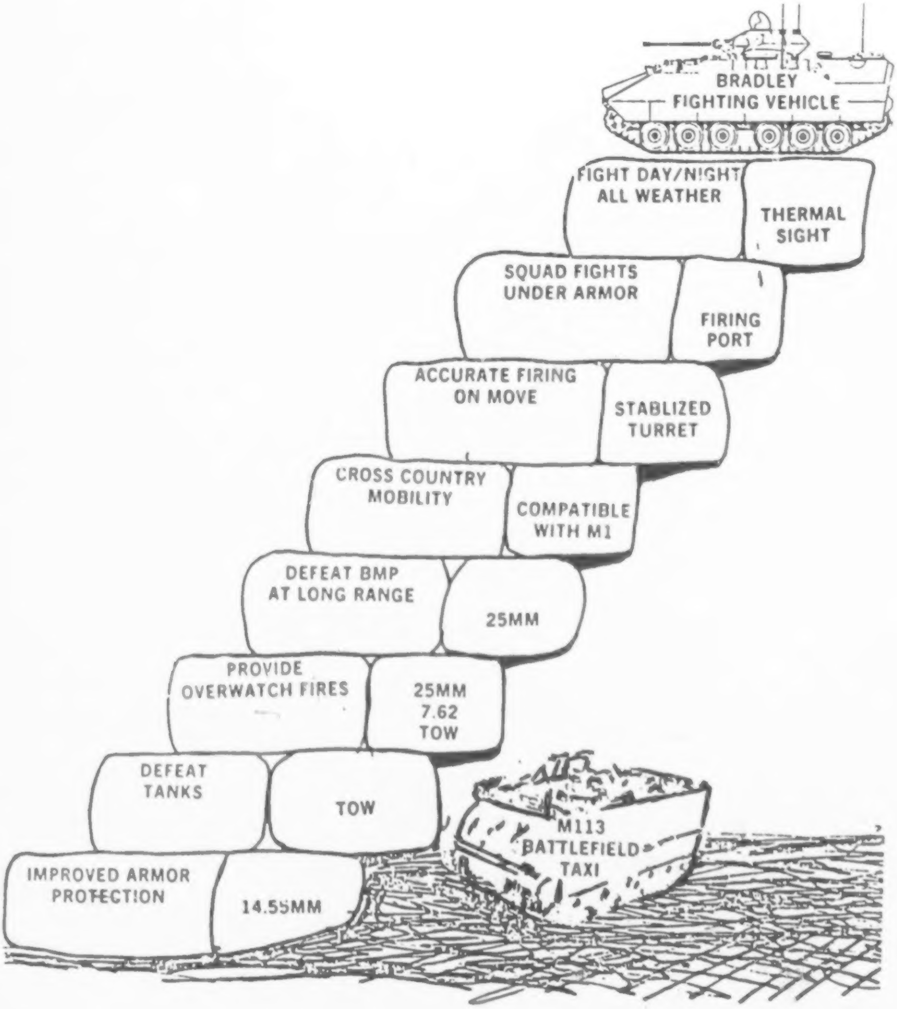
No other single vehicle can provide these functions for the mechanized and armored cavalry units. As a comparison, the following chart shows in a building block layout the additional capability the Bradley Fighting Vehicles provide over the M113.

(Chart attached)

The Bradley is designed to counter the mechanized forces of the Warsaw Pact. It counters changes made in the Russian mechanized infantry carriers for BRDM's to BMP's and to the BMP-M1981. Additionally they provide a synergistic effect with the M1 Abrams tank, AH 64 attack helicopter and Multiple Launch Rocket System to counter changes made in Soviet tanks from T64 to T80.

The Army has conducted numerous studies of other means to counter the threat. In every case to date, the Bradley is the most cost-effective method in both offense and defense.

(The chart follows:)


BRADLEY
FIGHTING VEHICLE
FIGHT DAY/NIGHT
ALL WEATHER
THERMAL
SIGHT
SQUAD FIGHTS
UNDER ARMOR
FIRING
PORT
ACCURATE FIRING
ON MOVE
STABLIZED
TURRET
CROSS COUNTRY
MOBILITY
COMPATIBLE
WITH M1
DEFEAT BMP
AT LONG RANGE
25MM
PROVIDE
OVERWATCH FIRES
25MM
7.62
TOW
DEFEAT
TANKS
TOW
IMPROVED ARMOR
PROTECTION
14.55MM
M113
BATTLEFIELD
TAXI

PERFORMANCE OF THE M1 TANK

QUESTION: Please summarize the test and performance results on the M1 tank over the past year.

ANSWER: The development effort with the M1 Tank System was basically completed with the DT/OT III test in 1981. Post DT/OT III testing is being conducted primarily on comparison test vehicles from each production plant. These vehicles are selected at the rate of 3 per year for the purpose of assuring the production process is being maintained. The successful results observed during the DT/OT III are being maintained or improved upon. The powertrain durability test required by Congress was also conducted in 1983. Seven vehicles were operated for a total of 29,199 miles. The test results demonstrated that the M1 now meets the required powertrain durability requirement.

SECOND SOURCE FOR TANK ENGINE

QUESTION: What is the Army's current position on the need for a second source engine for the tank?

ANSWER: The Army's analysis has determined that the best interest of the government will be served by establishing a dual source for the engine and it has been recommended.

M1 TANK PRODUCTION

QUESTION: Is the Army fully obligating the funds appropriated for fiscal 1984 for procurement of 840 tanks?

ANSWER: Yes. The Army is taking action to obligate funds for procurement of 840 tanks in FY84 and contract definitization is on schedule.

QUESTION: Has there been any change in Army plans for the total buy of M1 tanks?

ANSWER: No. The Army still intends to buy 7,058 M1 tanks; however, tank fleet structure into the 1990's is currently under study.

QUESTION: Why did the Army request 720 rather than 840 tanks in fiscal 1985?

ANSWER: The request was based on affordability reasons alone.

QUESTION: What will it cost per tank to procure 720 rather than 840 in fiscal 1985? How did you calculate these numbers?

ANSWER: Based on past experience, our analysts calculate a net effect of $53,000 per tank, for a FY85 impact of $44.5 million. The cost penalty is primarily in the increased overhead applied to each tank. There are certain fixed costs at the tank plant which cannot be reduced as tank production rate is reduced; consequently, each tank costs more at a lower production rate.

RUNWAY AT FORT KNOX

QUESTION: I understand that Fort Knox cannot accommodate a MEDEVAC plane. Are there any plans to lengthen the runway in order to allow this? If so, what are they and what is the timetable? What must actually be done? What is the estimated cost?

ANSWER: Fort Knox currently has an unfunded project in the long range military construction program to lengthen runway 15-33. When completed, the lengthened runway will accommodate the MEDEVAC. The programed amount is estimated at $11.6 million, but a firm project cost estimate cannot be determined because the project documentation package has not been developed and submitted to HQDA by the major command. The major command did not prioritize this project in their most recent Five Year Defense Plan.

CONSTRUCTION OF LEXINGTON-BLUE GRASS DEPOT

QUESTION: The Army apparently plans to build three nerve gas incinerators, including one at the Lexington-Blue Grass Depot. How much has been spent on planning this construction? Has any in-house architectural and engineering work been done? Has any outside A&E work been done? When would construction funds be requested? In what account?

ANSWER: To date, $1.8M has been obligated in the development of the M55 Rocket/M23 Landmine disposal project. The A&E efforts associated with this project have been done on contract. Funds necessary for facility construction will be part of the Army's FY86 Military Construction request.

CHEMICAL DEMILITARIZATION PROGRAM

QUESTION: Is the facility operating at Tooele the only comparable system in existence? What are the system's capabilities? What is it being used for?

ANSWER: The Chemical Agent Munitions Disposal System (CAMDS) located at Tooele Army Depot, Utah is an industrial sized prototype facility used by the Army to prove chemical demilitarization processes and technologies. Although it is a prototype or pilot facility and does not have a designed throughout rate or industrial capacity per se, it is the only operable chemical munition disposal facility currently in existence in the U.S. Older facilities at Rocky Mountain Arsenal at Denver, Colorado are no longer being used for lethal agent demilitarization. The facility has been used in proving the current state-of-the-art incineration technology and has been very successful in developing cost reduction initiatives for planned demil facilities. The most recent CAMDS actions have been in support of design efforts for the Johnston Atoll Chemical Agent Disposal System (JACADS) and demonstration of arms control stockpile destruction verification techniques. The JACADS designs and technology will be applied to the M55 Rocket/M23 Landmine Disposal Project at locations in the U.S.

QUESTION: What is the total stockpile of M55 rockets and where are they currently stored?

ANSWER: There are 476,950 M55 Rockets in the current inventory. Their locations and quantity are Tooele Army Depot, Utah (40,457); Anniston Army Depot, Alabama (78,460); Pine Bluff Arsenal. Arkansas (110,042); Lexington-Blue Grass Depot Activity, Kentucky (69,490); Umatilla Army Depot Activity, Oregon (106,202) and Johnston Island in the Pacific (72,299).

QUESTION: Have any M55 rockets been previously destroyed? If so, when and where?

ANSWER: A total of 13,951 M55 Rockets were disposed of at the CAMDS facility, located at Tooele Army Depot, during FY80 and FY81.

CHEMICAL DEMILITARIZATION

QUESTION: If the Kentucky facility were built, would only the M55's currently stored there be disposed of or would other items be brought in?

ANSWER: The Army does not intend to move M55 Rocket or M23 Landmines for disposal. These munitions are thin-walled and their explosive components cannot be removed prior to their disposal. Because of the extreme difficulties and costs involved in insuring absolute safety during transportation of these old munitions, the Army does not wish to transport these munitions through the public domain. Consequently, the Army will request funds to dispose of these munitions at each storage location.

QUESTION: Would the facility be capable of handling items other than the M55? If so, what?

ANSWER: The M55 Rocket/M23 Landmine disposal facilities are designed to accommodate additional equipment for disposal of all stocks of chemical munitions presently stored at each location. Equipment installed in the facilities in support of this FY86 project will only be for M55 Rockets and M23 Landmines.

QUESTION: How was the decision to build three facilities reached?

ANSWER: Fundamentally, the reason that the Army wishes to build multiple facilites to dispose of M55 rockets and M23 landmines is that we do not want to move these munitions through the public domain. These munitions have thin wall construction, have explosive components which cannot be separated from the munition prior to disposal and, in the case of the rockets, are proving to be troublesome because of their age. As these munitions have no military utility, represent a potential future hazard and the Army has developed a safe effective means for their disposal, it is prudent to dispose of them. The requirement for disposal was studied and the recommendation to construct facilities for on-site disposal was approved by the Army after review. This approach makes maximum use of existing and programed facilities. The Army will request FY86 funds to construct disposal facilities at Anniston Army Depot, Alabama;

Umatilla Army Depot Activity, Utah; and Lexington-Blue Grass Army Depot Activity, Kentucky. Existing or programed facilities will be used for disposal of the munitions at other locations. The BZ disposal facility (FY84 construction) will be retrofitted upon completion of BZ operations to dispose of rockets and mines at Pine Bluff Arsenal, Arkansas. Munitions stored at Tooele Army Depot, Utah, will be disposed of in CAMDS. Rockets and mines stored at Johnston Island in the Pacific will be processed in the Johnston Atoll Chemical Agent Disposal System (JACADS) which is part of our FY85 program.

QUESTION: What other items in the stockpile have been declared obsolete?

ANSWER: Chemical munition items which have been declared obsolete include M55 Rockets (GB and VX filled) M122, 155mm Gun Projectiles (GB filled) and M104, 155mm Gun Projectiles (HD filled). The number of munitions which have been declared obsolete totals 547,679. In addition, there are 162,497 munitions which are unrepairable and will require future disposal.

QUESTION: What items in the stockpile are we likely to have to dispose of in the next five years? The next ten years?

ANSWER: We feel that it is essential to demilitarize all BZ munitions, all M55 rockets, and the majority of the M23 landmines in the current inventory because of the potential hazards these old munitions represent. Construction of the BZ disposal facility will begin in FY84 and facilities which will address the disposal of M55 rockets and M23 landmines are programed for FY85 and FY86. All of these near term projects are projected for completion by FY91 and represent essential near term programs. Disposal of other obsolete or unrepairable chemical munitions is somewhat less urgent and we are addressing future requirements with an extensive research and development effort aimed at providing better ways of dealing with large munition quantities at lower costs.

LOCATION OF LIGHT DIVISION

QUESTION: Where do you expect to locate the new Light Division you expect to activate early in FY85?

ANSWER: A decision on stationing of the 17th Active Component Division has not yet been made. A range of installations in the United States which could accommodate the division is being examined. Key considerations include: strategic positioning, training areas available, facilities available, future construction costs, as well as environmental and community impacts. An onsite survey is being conducted. The results of that survey will be forwarded to Headquarters, Department of the Army during April 1984.

QUESTION: You are creating two new light divisions but not increasing end strength. Where are you taking the manpower from?

ANSWER: We plan to convert the existing 7th Infantry Division at Fort Ord to a new light division design in FY 85 and begin a time-phased activation of a new light infantry division commencing in FY 85 and continuing for a couple of years. Manpower for these divisions will come from force structure adjustments--the smaller division being one obvious source--we are making to achieve and maintain a balanced force within an end strength of 780,800. The total force will be shaped to provide a balanced mix of heavy and light forces with necessary support to ensure rapid responsiveness to the full range of threats. It will be based on an architecture that will produce an affordable, highly combat ready, strategically deployable army of excellence for the 1990's.

QUESTION: Please elaborate on how it can be deployed with less strategic lift.

ANSWER: The new Light Division is significantly smaller than a current division both in terms of numbers of people, and quantities and types of equipment. The current infantry division has over 18,000 soldiers authorized, while the new Light Division has approximately 10,000 soldiers. The current infantry division design includes both an armor battalion and a mechanized infantry battalion, as well as over 2900 tactical wheeled vehicles. The new Light Division is composed primarily of infantrymen and has no heavy tracked vehicles (tanks and armored personnel carriers) in the core division design. Additionally, there are only about 1100 tactical wheeled vehicles in the Light Division. These factors primarily account for the ability of the Light Division to deploy in less than one-third of the C141 sorties required for the current infantry division.

JOINT TRAINING EXERCISES

QUESTION: General Wickham's statement referred to "extensive joint training exercises like those in Honduras and in Egypt." What joint training exercises are planned for the remainder of FY 84?

ANSWER: Major exercises planned for the remainder of FY 84 include [deleted].

QUESTION: What joint training exercises are planned during FY 85? and how much is set aside in the FY 85 budget for such expenditures?

ANSWER: There are a total of 49 JCS directed/coordinated exercises programed in FY 85. Army component participation will cost $92 million.

QUESTION: How do you estimate the costs of an exercise?

ANSWER: Exercise costs are developed by Army Major Commands in coordination with the sponsoring Unified Command based on final cost reports of O+M expenses from previous exercises. Adjustments are made in accordance with new exercise areas/locations (distances) and force levels of participation.

SUBCOMMITTEE RECESS

Senator **Sevens**. We thank you all and thank you for your presentation. It has been a very good one.

Secretary **Marsh**. Thank you, sir.

[Whereupon, at 11:55 a.m., Thursday, Feb. 9, the subcommittee was recessed, to reconvene at the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1985

TUESDAY, FEBRUARY 28, 1984

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10:10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Ted Stevens (chairman) presiding.

Present: Senators Stevens, Weicker, Andrews, Kasten, D'Amato, Rudman, and Johnston.

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE AIR FORCE

STATEMENTS OF:

HON. VERNE ORR, SECRETARY OF THE AIR FORCE

GEN. CHARLES A. GABRIEL, CHIEF OF STAFF, U.S. AIR FORCE

ACCOMPANIED BY MAJ. GEN. TRUMAN SPANGRUD, DIRECTOR OF BUDGET, COMPTROLLER OF THE AIR FORCE

OVERVIEW OF AIR FORCE BUDGET REQUEST

OPENING STATEMENT OF SENATOR STEVENS

Senator STEVENS. Mr. Secretary, my apologies to you and your colleagues for the delay. I had an unexpected interruption of my schedule last night in Boston. I am glad to be able to be back this morning.

I want to tell you that I am happy that the cows are contented in Alaska, and we have gotten that issue out of the way. So we will not have to discuss that at all. [Laughter.]

Secretary ORR. We are also pleased.

BUDGET REQUEST

Senator STEVENS. We are here this morning to conduct an overview of the Air Force budget for the fiscal year 1985. That portion of the Air Force budget within this subcommittee's jurisdiction, including the new retired pay accrual totals $105.4 billion, which is an increase of $22.4 billion over appropriations to date for 1984.

Leaving out the retired pay accrual, the comparative increase in budget authority amounts to $17.6 billion, or a real growth approaching 15 percent. The Air Force again this year enjoys not only the sharpest budget growth, but the largest portion of the military budget in relationship to its sister services.

Mr. Secretary, we are going to have to explore that growth in the funding and attempt to determine why it is needed, and particularly in light of the growing pressures on this committee to reduce 1985 defense spending.

COMPARATIVE TABLE

Before starting, I would like the Air Force to prepare for insertion in the record at this point a comparative table of budget authority and outlays appropriated for fiscal year 1984, for the fiscal year 1985 restricted to those appropriations contained in the annual defense appropriations bills. I would ask that you please include the dollar changes and the percentage of those changes as part of the table.

COMPARATIVE TABLE

The FY 84 budget authority and outlays shown reflect appropriated amounts and associated outlays and thus do not include supplementals or other adjustments shown in the FY 84 column of the FY 85 request.

	Budget Authority ($ Thousands)			
	FY 1984 Approp	FY 1985 Request	Dollar Change	Percent Change
Military Personnel, AF	$12,577,203	$17,799,900	$+5,222,697	41.5%
Reserve Personnel, AF	380,000	565,800	+ 185,800	48.9%
National Guard Personnel, AF	589,100	889,200	+ 300,100	50.9%
Aircraft Procurement, AF	21,080,110	28,676,500	+7,596,390	36.0%
Missile Procurement, AF	7,747,838	9,820,600	+2,072,762	26.8%
Other Procurement, AF	6,914,232	9,561,500	+2,647,268	38.3%
RDT&E, AF	12,227,706	14,401,955	+2,174,249	17.8%
Operation & Maintenance, AF	17,573,895	20,234,500	+2,660,605	15.1%
Operation & Maintenance, AFR	781,600	883,461	+ 101,861	13.0%
Operation & Maintenance, ANG	1,789,300	1,862,148	+ 72,848	4.1%
Air Force Stock Fund	1,288,725	666,093	- 622,632	-48.3%
TOTAL	$82,949,709	$105,361,657	$+22,411,948	27.0%*

	Outlays ($ Thousands)			
	FY 1984	FY 1985 Request	Dollar Change	Percent Change
Military Personnel, AF	$12,568,980	$17,787,400	$+5,218,420	41.5%
Reserve Personnel, AF	379,360	554,100	+ 174,740	46.1%
National Guard Personnel, AF	580,760	872,900	+ 292,140	50.3%
Aircraft Procurement, AF	13,837,373	17,960,300	+ 4,122,927	29.8%
Missile Procurement, AF	5,014,558	6,576,300	+ 1,561,742	31.1%
Other Procurement, AF	6,039,123	7,482,200	+ 1,443,077	23.9%
RDT&E, AF	11,838,987	13,578,100	+ 1,739,113	14.7%
Operation & Maintenance, AF	17,089,511	19,611,100	+ 2,521,589	14.8%
Operation & Maintenance, AFR	768,700	868,900	+ 100,200	13.0%
Operation & Maintenance, ANG	1,759,170	1,835,100	+ 75,930	4.3%
Air Force Stock Fund	827,700	835,800	+ 8,100	1.0%
TOTAL	$70,704,222	$87,962,200	$+17,257,978	24.4%

*For the first time in FY 1985, the military personnel accounts include financing for accrual funding of the military retirement system. This comparison does not take inflation into account and therefore does not reflect real growth percentages.

INTRODUCTION OF WITNESSES

Senator **Stevens**. I am pleased to see that we have with us today the Honorable Verne Orr, Secretary of the Air Force; and Gen. Charles A. Gabriel, the Air Force Chief of Staff. We have your prepared statements, and we will print them in full in the record. I would ask that you highlight the major budget issues this subcommittee will be reviewing.

I first want to ask if Senator Johnston has any comments.

Senator **Johnston**. No, Mr. Chairman.

Senator **Stevens**. Senator Rudman.

Senator **Rudman**. No, thank you, Mr. Chairman.

Senator **Stevens**. Mr. Secretary, would you please introduce those who will testify for the reporter, and then proceed as you wish.

OPENING REMARKS OF SECRETARY ORR

Secretary **Orr**. Thank you. I will be opening with a statement, and General Gabriel will follow with a short statement, and Maj. Gen. Truman Spangrud is here to help answer the committee's questions.

I would like to just very briefly touch on several of the successes that the Air Force has had, and also outline for you some of our concerns in the year ahead.

RECRUITMENT AND RETENTION

The first success that we are having right now is in recruitment and retention, which are at an alltime high. In the month of August, for example, we brought more than 4,000 new recruits without prior service into the Air Force, and only 4 of them did not have high school diplomas. For the year as a whole, over 98 percent of our new recruits were high school graduates.

Retention is also very good. Morale is exceptionally high in the Air Force. I think General Gabriel, who has been with the Air Force for 33 years, and I with a much shorter tenure, feel that this is probably the best fighting Air Force that this country has ever seen.

SUCCESS OF B-1 SCHEDULE

The second success I would like to mention is the fact that the B-1B is proceeding ahead of schedule and under budget. We had originally planned to roll it out on October 6, and we have now been able to advance even that by about 1 month so that it will be approximately 6 months early on the rollout, and all signs are favorable that it will continue under budget.

ALTERNATE FIGHTER ENGINE COMPETITION

The third thing I would mention is a very successful competition which we just completed for an alternate fighter engine. It was between two strong companies, both of whom had excellent presentations, both of whom had engines that are far superior in their reliability and their durability to what we are now using.

We have been, for 15 years, with one company as sole source, and we thought it was very desirable to split the offer. So we now have two suppliers. We got excellent warranties and much better availability to subcontractors to get spare parts, so we think we are very far ahead with this particular competition.

DECREASES IN RECRUITMENT

In the nature of concerns, I might mention that we have seen a slight drop in the number of young people coming across the threshold for recruitment purposes. Our drop is not as dramatic as the Secretary of the Army has been mentioning when he talks about a substantial drop in those taking the preenlistment tests. But we have noted that our recruiters now are having to do more work and go out, that fewer come in and volunteer and say: "I want to talk with you about joining the Air Force."

RETIREMENT CONCERNS

The second concern is retirement. The constant talk about retirement has upset the troops in the field, many of whom think they came in with a contract and that there is some danger that that contract is going to be unilaterally voided by the Congress.

I think retirement is the one issue that is causing our troops deep concern. Pay is satisfactory. Living conditions can be improved. Retirement is a very serious concern to them.

SPARE PARTS PROBLEMS

The third thing that I would mention as a concern is spare parts. Although it has not been noted greatly by the media, nearly every example of overcharges on spare parts was found by the Air Force as we ourselves tried to correct the situation. We have been taking very aggressive steps. I think there is ample evidence that we had not used competition as much as we should have in the past, and we are using it a great deal more now and instituting a number of other steps which, if the members are interested, I would be glad to discuss.

QUALITY OF LIFE

The last thing I would talk about as a concern is the quality of life in the Air Force. For example, when our people change stations—and they are required to change several times throughout their careers—the Government spends about $1 for every $3 that the person spends—that is, only reimburses $1 out of $4—whether enlisted or an officer, in that change. I am concerned, for example, that we pay our people 13 cents a mile to drive their private car to a new station.

I was in business in 1966 and I paid our people 13 cents a mile to drive their cars on my business when they had to use their own car, and here we are 18 years later still paying the same. The weight allowances are no longer adequate for people's household goods, and we have areas like housing in Greenham Common where we are not able to house all our troops, and so we have to move them on 1-year stints because they are unaccompained. It is expensive, and it is not good on morale. If we had housing there, those tours could be 3 years accompanied.

So there are areas of quality of life that we hope to talk with the committee about in the months that follow before the final markup.

[The joint prepared statement of Secretary Orr and General Gabriel follows:]

DEPARTMENT OF THE AIR FORCE

JOINT OPENING STATEMENT OF:

The Honorable Verne Orr
Secretary of the Air Force

and

General Charles A. Gabriel
Chief of Staff, United States Air Force

BUDGET OVERVIEW

Over the past three years, the Air Force has made a good start in regaining its strength — strength sapped by inadequate support for defense in the 1970s. Although we still have a long way to go, we're beginning to see results in the quality of our forces. With public and congressional support, we will keep up the momentum in building strong and ready forces.

Since we reported to Congress last year, the conflicts in Lebanon, Afghanistan, and elsewhere around the globe continue to show that we live in a dangerous world. The Soviet Union continues to exploit local and regional conflicts in Southeast Asia, the Middle East, Africa and Central America. The community of nations also witnessed the Soviet Union's shooting down of KAL Flight 007. The stronger the Soviet military gets, the more brazen become the expressions of that power.

Working to build a dominant military power, the Soviets continue to outpace us with more and improved weapon systems — all the while proclaiming their desire for peace in the world. In the 1940s, we and our allies paid a terrible price for a false peace held out by a totalitarian regime. Experience taught the free world a hard lesson: weakness and appeasement lead not to peace but to war. Since World War II, we and our allies have depended on strong forces to deter aggression. We enjoy our security and freedom because we have strength in national will and the forces to back it up — the prime elements of deterrence.

Our nation is striving to maintain peace through a policy of deterrence and arms reductions. For nearly 40 years, our strong nuclear forces have successfully deterred general war and assured the security and peace of Western nations. To keep that peace, we have to maintain strong deterrent forces while we pursue equitable and verifiable arms reductions agreements with the Soviet Union.

PRIORITIES. While we focus on countering Soviet nuclear forces, we must also be prepared to meet the threat from the Soviets and from other quarters across the entire spectrum of conflict. Consequently, we have structured our priorities to deter aggression at any level. Our success depends on getting the most out of every dollar and ultimately on the quality and dedication of our people. Well-trained, well-led, and highly motivated people are the key to strong and ready forces. Concern for our people is always our first responsibility. We continue to emphasize the priorities we set last year to correct our most pressing deficiencies.

- Modernize strategic forces (offensive and defensive)
- Improve readiness and sustainability of general purpose forces
- Increase airlift capability
- Modernize and expand tactical forces

Moreover, our increasing use of space for national defense and civilian purposes makes it prudent that we place greater emphasis on improving our capabilities in space. We need to be prepared to take advantage of the opportunities and challenges space-based systems present.

STRATEGIC MODERNIZATION. Modernization of our triad of strategic offensive forces was generally deferred during the 1970s. But during that time, the Soviets worked relentlessly to improve and expand their strategic arsenal. Consequently, the balance shifted as the Soviets gained important advantages in many measures of strategic nuclear strength.

To maintain a credible deterrence and a stable nuclear balance, the President, in October 1981, directed that we undertake the first comprehensive modernization of our strategic forces since they were built in the 1950s and 1960s. We are vigorously pursuing this program to redress the imbalances created by the Soviet buildup and our failure to keep pace. We are improving the survivability, endurance, and capability of our strategic surveillance, warning, and command, control, and communications systems. To improve strategic defense, we are modernizing our continental air defense forces, and for the longer term we are developing technologies to provide a comprehensive strategic defense. Moreover, three squadrons of B-52s equipped with air launched cruise missiles (ALCMs) are now operational. We will procure a limited number of ALCMs and we want them to be as capable as possible. Therefore, we are developing and will deploy the advanced cruise missile. The B-13 program is on schedule and within costs, with the first aircraft to roll out in September of this year. We are also developing the Advanced Technology Bomber (ATB) that will take full advantage of low observable technologies.

Thanks to the President's Commission on Strategic Forces and to congressional support, we finally have a comprehensive program under way to upgrade our land-based ICBMs. We have established a program office at Norton Air Force Base to manage the development of the new small ICBM for the 1990s. The number of people working on this program will double this year and a general officer will head this office by mid-year. With three test launches completed to date, Peacekeeper development is on track, with initial deployments in Minuteman silos scheduled for late 1986.

Our strategic offense and strategic defense programs are tied closely to US arms control efforts. We strongly support efforts to reach agreements with the Soviets on deep, equitable, and verifiable reductions in nuclear forces. We remain confident that dialogue with the Soviets on strategic and intermediate-range nuclear forces can produce agreements that substantially reduce nuclear arsenals on both sides and help reduce tensions. We look forward to prompt resumption of negotiations.

READINESS AND SUSTAINABILITY. Because of extremely tight defense budgets in the 1970s, readiness and sustainability efforts were delayed to fund badly needed tactical force modernization and a modest expansion of our force structure. We simply didn't have the dollars to keep our people, facilities, and equipment fully ready for combat. The highest priority for our general purpose forces is to improve readiness and sustainability which allow us to get the most out of what we've got. Our recent involvement in Grenada clearly showed the importance of preparedness.

During the past three years, we've more than doubled the funding for readiness and sustainability, and we are seeing good results in the quality of our people in the active and reserve forces and in the equipment, spares, and fuel needed to fight. Additional funding has also contributed to increased flying hours, realistic exercises for combat-like experience, and hands-on training for skilled mechanics. Even with the rigors of aggressive training, tough exercises, and frequent deployments, 1983 was our safest year on record, with 1.73 major accidents per 100,000 flying hours — a significant improvement over even 1982's record rate of 2.33. The flying safety record shows the effects on combat forces when readiness initiatives such as increased flying hours, spare parts, and realistic training are sufficiently funded.

Logistics — including munitions and spare parts — plays a critical part in readiness and sustainability. We're increasing our munitions stocks, including air-to-air and air-to-surface missiles. As we replace aging systems, expand our forces, and increase our stocks of spares, we are stressing sound management practices to ensure we get the most for our money. Along with realistic budgeting and program stability, we continue to explore competition, multi-year purchasing, contractor support, and economic production rates for improved economies and efficiencies. Our intensive study, particularly by the Air Force Management Analysis Group (AFMAG), of our system for buying spares has produced excellent suggestions for improving management. Many of these have been adopted. We are pursuing all available means to provide civilian spaces needed to ensure price reasonableness and expand competition in our spares acquisition program. Thus, we have asked for and received from DoD a civilian overstrength authority for 1,000 spaces in FY 84 and we have programmed another 1,900 spaces, mostly for Air Force Logistics Command, in FY 85.

In 1983 there was much media attention on high prices for spare parts. It is important to note that nearly every instance highlighted by the media was uncovered by Air Force people as we worked diligently to unearth and correct all instances of improper pricing. Together with the public and Congress, we will not tolerate overpricing and mishandling of spares acquisition. We've asked for industry's cooperation and put business on notice that we'll pay a fair price and no more.

To reduce the vulnerability of our people and resources to terrorist attacks, we have established an anti-terrorism program that includes security precautions, defensive measures, intelligence, and awareness programs. We also established a special task group, chaired by a general officer, to examine all aspects of terrorism. In all our efforts, we are working closely with the other services, as well as civilian and host nation authorities.

FORCE PROJECTION. Our combat forces cannot deter or, if need be, defeat aggression unless they can deploy quickly to wherever American interests are threatened. For too long, a lack of airlift capability to deploy forces to potential battlefields has jeopardized our combat potential. Only recently have we begun to improve the situation. Our increased stock of spare parts, the near-term buy of 50 C-5Bs and 44 additional KC-10s, and a contract to add cargo-convertible features to 19 commercial passenger aircraft will increase our air deployment capability by almost 75 percent.

To satisfy remaining inter- and intra-theater airlift requirements, and to replace aging C-141 and C-130 aircraft in the 1990s and beyond, we are developing the C-17. Able to operate into at least three times as many free world airfields as our current intertheater airlift force, the C-17 will deliver combat units directly from their home stations to their final theater destinations. The evolving mix of C-130, C-141, C-5, KC-10, C-17, and commercial aircraft will, for the first time, provide our combat forces comprehensive air mobility.

Equally important, the air refueling requirements of both our strategic and conventional forces have grown dramatically in recent years. To satisfy these needs, we are modifying our KC-135s with new engines and other improvements to increase capability by roughly 50 percent. KC-10s will also provide air refueling capability while significantly helping our airlift force.

For lower level conflicts in particular, improving our special operations forces is one of our most important initiatives. We will include the HH-60D/E in both the special operations and combat rescue forces. Additionally, we will be modifying existing HC-130, AC-130, and MC-130E aircraft and purchasing MC-130Hs specifically for the special operations mission.

TACTICAL FORCES. We are continuing to buy the best fighters in the world today — the combat-proven F-15 and F-16. We will improve their air-to-surface, night, and weather capabilities to meet the growing threat from Soviet forces. We're also committed to stable production of F-15s and F-16s to modernize and expand our tactical forces. Our goal is to achieve 40 tactical fighter wings before the end of the decade.

The alternate fighter engine competition resulted in fighter engines that will have greatly improved reliability, maintainability and performance. Our decision to award one year contracts to both competitors will give us the most cost effective program possible. To complement the F-15s and F-16s, we intend to procure a dual role fighter. We will also continue developing the advanced tactical fighter, taking advantage of promising technologies to meet anticipated advances in Soviet fighter capabilities in the mid-1990s and beyond.

To counter Soviet intermediate range nuclear forces (SS-20s and SS-4s) aimed at Western Europe, we are working closely with NATO nations. Further, we have begun to deploy ground-launched cruise missiles (GLCMs) in the United Kingdom and are proceeding with deployment plans for Italy and other European allies.

SPACE. US forces are more dependent than ever on systems in space and that dependence will continue to grow. We use space systems for surveillance, tactical warning, navigation, meteorology, communications, and command and control for land, sea, and air forces. During the past year, the operational emphasis provided by Air Force Space Command has improved our ability to support and control our valuable assets in space.

Recognizing the Soviet threat in space, our own growing dependence on space, and the military potential of space systems, the Air Force recommends that a unified space command be established soon. The unified space command would exercise operational responsibility for US military space systems, conduct planning for wartime use of space assets, be the focal point for military requirements in space, and be the advocate for new systems.

The Soviets are already busy exploiting space for military advantage, including deployment of an anti-satellite weapon. Our nation cannot allow the development of a dangerous imbalance in military capabilities in space. Rather, we need to keep our technological lead in space systems, pursue promising avenues to strengthen deterrence by countering Soviet space efforts, and hedge against potential breakthroughs in Soviet capabilities. At a minimum, we have to ensure our space systems can survive and operate in a wartime environment.

PEOPLE. A renewed sense of patriotism, increased public support, and well-deserved increases in compensation have reversed the grim situation we faced in the late 1970s. In those years too many of our experienced people hung up their uniforms to find a better life for themselves and their families. In contrast, FY 83 was the best recruiting and retention year ever for the Air Force — 98 percent of new recruits had high school diplomas and first term reenlistments of eligibles rose to an all-time high of 66 percent. But we cannot become complacent. An improving economy, rising employment opportunities, demographic changes, and other factors require that we keep pay and entitlements corresponding to the civilian sector. We know from the experience of the late 1970s that if pay is not comparable to that available in the private sector, many of our experienced people will leave us. Of particular concern is the military retirement system, our number one career incentive. The current system works well in helping us maintain a vigorous, experienced, and combat-ready force. Reductions to the retirement system adversely affect retention, readiness, and our overall ability to get our job done.

Even now we need additional skilled people to operate our new equipment and to keep our forces ready for combat. Congressional curtailment of end strength growth in FY 84 will degrade performance and safety, weaken morale, and ultimately reduce preparedness. Together with continued pressure to reduce US manpower in Europe, this reduction means that without the requested growth in FY 85 we would not have enough people to accomplish our missions and fulfill national commitments.

TOTAL FORCE. The Total Force includes all active and reserve components of the Air Force. The Air Reserve Forces (ARF) contribute more than two-thirds of our nation's air defense interceptors, half of our tactical reconnaissance mission, and about 60 percent of tactical airlift. Moreover, they provide half of our strategic airlift and tanker/cargo crews. In addition, over 11,000 Individual Mobilization Augmentees (IMA) are assigned to active duty Air Force units. As members of the Selected Reserve, they provide important support to the active force in critical wartime skills such as engineering, medicine, and security police.

Reserve forces are flying modern, first-line equipment such as our F-16 and A-10 fighters, C-5 and C141B transports, and KC-10 tankers and will receive F-15s in the future. We also plan to increase mission support activities in air base ground defense, aeromedical evacuation and medical service units, as well as aerial port units. We're proud of the mix of forces we have now and will continue to look for opportunities to expand the role of the ARF. Although force mix decisions involve many complex factors, helping the active force meet and sustain wartime surge requirements continues to be the primary way we plan to use our reserve forces. Unprogrammed, random force mix changes could severely affect our readiness and flexibility in meeting requirements.

INSTALLATIONS. The Air Force fights from its bases. During the rest of the decade, we need major capital investment in our bases — an investment that will return high payoffs in readiness and sustainability. We have to maintain, repair, and replace old, inadequate facilities and, when necessary for our mission, build new facilities. Good examples of needed new construction are the support facilities at main operating bases for ground-launched cruise missiles (GLCMs) in Europe. We urge Congress to approve construction of GLCM support facilities that will allow accompanied tours and improved quality of life for our people. Unaccompanied tours caused by inadequate support facilities are a strain on our people and increase training requirements with people rotating frequently — a costly way to operate.

FY 85 BUDGET. We have a formidable task in supporting America's commitments as the leader of free nations and in countering the unparalleled growth in Soviet military power. With the programs and priorities outlined above, we are confident the strong and ready forces we are building will be equal to that task.

For FY 85, the Air Force requests $108.7B (which for the first time includes $4.86B for retirement accrual) to ensure our readiness to fight with what we have and modernization to counter the future threat. Even with increased defense funding over the past few years, our Air Force request is about 2.3 percent of America's GNP. Although this figure approaches our 20-year average, it represents only a recent upturn from ten years of inadequate defense spending. During the 1950s and early 1960s, our nation devoted 9 to 11 percent of GNP to defense in peacetime years, significantly more than both the recent low of 5 percent in 1978 and today's 6.8 percent.

With the potential for conflict always present, America must be prepared. We've come a long way in the past few years in restoring the strength of our forces, but we cannot slacken our efforts. The momentum must be sustained.

MOVING ALLOWANCES

Senator **Stevens**. Mr. Secretary, before the general starts, I think we would welcome that if you could show us somehow that you were going to absorb the new increases in some kind of an adjustment in terms of rotational patterns or other allowances. But to make the representation now to the military that there somehow or other could be additional moneys allocated to that portion of the O&M account I think would not be possible.

I just feel that we can now make a change that would be unilateral for the military alone. What you mentioned is correct, but I have to comment that since I am chairman of the other subcommittee that deals with the civil services and general services, I know what their allowances are, too. The balance today is already in favor of the military in terms of the moving allowances.

Now there are other allowances that might not be in favor of the military, but today they are. But I do believe that you have the power within your reassignment policy to make the determination as to what the priority is. If you want to lengthen your duty assignments and increase the allowance for cost of moving because you are decreasing the frequency of moves, I think the committee would welcome such a suggestion.

Secretary **Orr**. May I make two comments, Mr. Chairman?

Senator **Stevens**. Yes.

Secretary **Orr**. In the frequency of moves, we have been working very hard on that. In the last 13 years since 1971, the number of moves in the Air Force has been cut in half, and the average length of stay has doubled on our bases. As a matter of fact, on every single assignment if it is an 18-month assignment, the average now runs 21 months; if it is a 36-month assignment, the average now runs between 42 and 44 months, substantially ahead of even the minimums that we require.

COMPARISON OF MOVING COSTS

The second thing, could I submit for the record a comparison of the moving costs? Because my interpretation of the civilian allowances and the military are slightly different, Mr. Chairman, and might I for the record submit a comparison?

Senator **Stevens**. I would be happy to do that, but you have not looked at the frequency of moves, Mr. Secretary.

Secretary **Orr**. I understand that. I understand that. Civilians very seldom move, and for many reasons our people frequently move. But on the move which the individual does not control, I think the civilians have a more liberal allowance for moving.

Senator **Stevens**. We would welcome that.

[The information follows:]

COMPARISON OF MOVING COSTS

In the last two years, federal civilian employees have received several improvements in their permanent change of station (PCS) allowances. In October 1982, the civilian employee's PCS mileage allowance was increased to 15 cents per mile. In addition, the reimbursement for Temporary Quarters Subsistence Expense (TQSE) was increased and the household goods weight allowance was raised to 11,000 pounds (regardless of grade or family size).

A year later, the President signed into law (P.L. 98-151, effective 14 November 1983) legislation authorizing further increases to the civilian PCS allowances. The law authorized all federal civilians to ship up to 18,000 pounds of household goods; however, DoD civilians were limited to the 13,500 pound by the FY 84 Appropriation Act. Also provided in the new authority was an increase in the number of days of TQSE reimbursement. In spite of the increases provided to federal civilians in the last two years, the sponsors of the 1983 legislation stated that the federal civilian improvements still lag behind the allowances provided by many private firms.

In contrast to federal civilians, military PCS initiatives over the same two-year period have been denied. In 1982, Congress denied funding for: (1) an increase to the members' and dependents' PCS mileage allowances; (2) an increase to the household goods weight increase for E-7s and above; and (3) the 4-day Temporary Lodging Expense (TLE) reimbursement. In 1983, Congress again denied funding for the 4-day TLE reimbursement — the only major PCS initiative programmed by the Services for FY 84. Due to the lack of funding for Service PCS initiatives, the gap between military and civilian PCS allowances has widened, as can be seen by the PCS comparison between a federal civilian and a representative military officer, (Lt Col/Cmdr) shown below:

COMPARISON OF PCS REIMBURSEMENTS:
(Washington, D.C. to Seattle, Washington)

PRIOR TO PCS	CIV*	MIL O-5 **
House Hunting Trip	$ -0-[1]	
Air Tvl/employee	$ 296.00[2]	
Air Tvl/spouse	296.00[2]	
10 days per diem/employee ($50/day)	500.00[2]	
10 days per diem/spouse ($37.50/day)	375.00[2]	
Real Estate Expenses	-0-	
Sale of Residence	6,000.00[2,3]	
EN ROUTE PCS		
Automotive Travel (2731 miles)	546.20[4]	832.96[5]
Tolls	10.00	-0-
Per Diem		
Member (9 days at 50/day)	-0-	507.60[6]
Employee (9 days at $50/day)	450.00	-0-
Spouse (9 days at $37.50/day)	337.50	-0-
Child 13 (9 days at $37.50/day)	337.50	-0-
Child 9 (9 days at $25/day)	225.00	-0-

FOLLOWING ARRIVAL AT NEW DUTY STATION		
Temporary Quarters Subsistence Expense (TQSE)		
Member + dependents (4 days)	-0-	-0-[7]
Employee + dependents (1st 30 days)	3,250.00[2,8]	-0-
Employee + dependents (2nd 30 days)	To be determined[2,9,10]	-0-
Miscellaneous Expenses		
No receipts	700.00	-0-
Dislocation Allowance	-0-	527.10
Real Estate Expenses		-0-
Purchase of Residence	3,500.00[2,12]	
TOTAL REIMBURSEMENTS	$16,823.20[13]	$1,867.66

1. Space-available Military Airlift Command (MAC) transportation for member only
2. P.L. 98-151 reimburses civilians for taxes on PCS reimbursements (Amount to be determined)
3. Amount based on selling price of $60,000 — reimbursement equals 10 percent of selling price, not to exceed $15,000
4. 20 cents/mile employee and 3 dependents
5. 13 cents/mile member; 7 cents/mile spouse; 7 cents/mile child over 12; 3.5 cents/mile child between 2 and 12
6. Includes per diem and a Variable Housing Allowance at Wash DC rate during travel time
7. Authorized in Pay Act of 1981, but no funds provided for implementation
8. Based on per diem rates prior to Oct 83 increase (new rates and procedures to be determined by GSA)
9. New law (98-151) authorizes an additional 30 days TQSE for employee and dependents, but per diem rates and procedures have not been determined by GSA
10. An additional 60 days TQSE authorized if approved by agency
11. Subject to taxation, less expenses
12. Amount based on purchase price of $70,000 — reimbursement equals 5 percent of purchase price, not to exceed $7,500
13. First $3,000 tax free — remainder added to gross annual income for tax purposes

*The employee entitlements in the above comparison apply to all civilians, regardless of grade, who are moved at the convenience of the government.

**Military reimbursements vary by rank. From an E-5 to an O-10, total reimbursements range from $1,571.59 to $1986.22.

To help bridge the gap and relieve some of the financial burden our members incur (median unreimbursed out-of-pocket expense for a military move is $1,519, exclusive of home ownership costs), the President's FY 85 Budget proposes implementing: 1) an increase to the member's PCS mileage allowance from 13 cents to 15 cents per mile; 2) an increase to the household goods weight allowance for E-7s and above by 500 to 2,500 pounds, depending on grade and raising the weight cap of 13,500 pounds to 18,000 pounds. Removal of the 13,500 pound weight ceiling will allow DoD military and DoD-civilians to gain parity with other federal civilians and will help close the gap between the weight allowances authorized the non-DoD Services (Coast Guard, Public Health Service, and the National Oceanic and Atmospheric Administration) and the DoD Services. Additionally, the PCS mileage increase proposed for DoD servicemembers will standardize the DoD military and civilian employee mileage allowances and will bring the DoD and non-DoD PCS mileage allowances closer in line. We strongly urge that funding be provided for the FY 85 PCS initiatives. As a final note, the following tables compare current household goods weight allowances for military and federal civilian personnel throughout the government with those proposed in the FY 85 Presidential budget:

Household Goods Weight Allowances

Current Weight Allowances

	DoD Mil*	DoD Civ*	Non-Dod Mil	Non-DoD Civ
O-10	13,500	13,500	24,000	18,000
O-9	13,500	All	18,000	all
O-8	13,500	Grades	14,500	Grades
O-7	13,500		13,500	
O-6	13,500		13,500	
O-5	13,000		13,000	
O-4	12,000		12,000	
O-3	11,000		11,000	
O-2	10,000		10,000	
O-1	9,500		9,500	
E-9	9,500		9,500	
E-8	9,000		9,000	
E-7	8,500		8,500	
E-6	8,000		8,000	
E-5	7,000		7,000	
E-4 Over 2	7,000		7,000	
E-4 Under 2	225 **		1,500	
E-3	225		1,500	
E-2	225		1,500	
E-1	225		1,500	

Proposed Weight Allowances

	DoD Mil	Dod Civ	Non-DoD Mil	Non-DoD Civ
O-10	18,000	18,000	24,000	18,000
O-9	18,000	All	18,000	All
O-8	16,000	Grades	16,000	Grades
O-7	15,000		15,000	
O-6	14,500		14,500	
O-5	14,000		14,000	
O-4	13,000		13,000	
O-3	12,000		12,000	
O-2	11,000		11,000	
O-1	10,000		10,000	
E-9	12,000		12,000	
E-8	11,000		11,000	
E-7	10,000		10,000	
E-6	8,000		8,000	
E-5	7,000		7,000	
E-4 Over 2	7,000		7,000	
E-4 Under 2	225 **		1,500	
E-3	225		1,500	
E-2	225		1,500	
E-1	225		1,500	

* Household goods weight allowances capped at 13,500 pounds by DoD Appropriation Act.

** E-4s with less than 2 years, E-3, E-2, and E-1 receive 1,500 pounds for PCS overseas.

OPENING REMARKS OF GENERAL GABRIEL

Senator **Stevens**. General Gabriel.

General **Gabriel**. Mr. Chairman, I would just like to make a few brief remarks to add an operational and a joint flavor to our written statement and what the Secretary just said.

Our priorities this year I think you know are the same as last year's. People remain our No. 1 asset. We will never forget that. That is one thing that we have got over the other side, quality of people. But other than that, as you know, strategic modernization and the C^3 that goes with it are No. 1.

Readiness and sustainability are No. 2. Mobility is next—that is airlift for the Air Force. And finally, tactical forces modernization and enhancement. We are also emphasizing space this year a little more.

OVERALL COMBINED FORCES STRATEGY

I would like to reassure you, Mr. Chairman, that the services are working hard to combine our efforts for the very best combined force we can get. I would like to give you a couple of examples of what we are doing with the Army and with the Navy in particular.

With the Army, we're working our budgets together. General Wickham's people are invited into our budget deliberations and we attend his budget deliberations when we put the budget together in the annual process. We have done that for 2 years now. We do a lot of things together; for example, joint programs in interdiction and the joint program in air defense. As a matter of fact, in one effort we put together several months ago, we put some of our people into a room and locked them up and told them: "OK, look at this. We have the point of contact in the battle area"—and this is the air/land battle that I am talking about. OK, we have the point of contact. We divide it up into bands beyond that and say there are target sets that we have to attack back there. What does the Army have working these targets, and what do we have, with electronic-warfare support and everything in each band. Where are we duplicating, bumping into each other? Where do we have voids?"

I think this effort will come up with results in the next year. Certainly we will use it in the next year's budget submission with maybe a few surprises. But at least what we are trying to do is come up with a well coordinated and most affordable combined force that we possibly can.

Working with the Navy, as I think you have probably heard from Admiral Watkins' testimony, we are doing a lot more than we have ever been able to do. We're working together in terms of a first priority, using F-15's, AWACS, and tankers in trying to extend their outer air-battle capabilities, or even to have us give protection to surface combatants that do not happen to have a carrier nearby.

But this cooperation is routine now, and we do not have to fumble around looking for frequencies every time we go out and marry up with a carrier task force. The AWACS, the F-15's, and the tankers are working very well with the Navy.

The other area is the B-52's: in sea surveillance, mine laying, and other priority missions, and now equipped with Harpoons. We have the capability now on the B-52's to fire Harpoons against ships. The B-52's with AWACS cuing them in. This is something that now is becoming routine in exercises.

So I think you can agree we are not charging off in four different directions. We do have an overall strategy, and we are trying to get the most synergistic effect out of the forces that we have.

As the Secretary said, 1983 was a banner year for the Air Force especially in recruiting and retention. It was the best ever. We also had the best flying safety record we have ever had: 1.73 accidents per 100,000 flying hours. I never thought we would get below 2 or even 3, and there has been a declining trend over the last 5 years.

I think the reason we had that record again is because of our people. They are good, well trained. But now flying hours is one thing that adds to that. In the last 5 years, we have gone from 13 hours—and this is in fighters—13 hours a month per crew, to this year when we will get about 20. That makes a big difference in their proficiency.

We have also got better equipment—F-16's, F-15's, A-10's, the AWACS, and all the new systems that we are bringing in. They are much more reliable, maintainable. In spite of what you might hear from some sources, they are more easily maintained and they are much safer. That is the reason I think we have accomplished this record.

Mr. Chairman, in discussions of reduced budgets and whatnot, my big concern is for the parts, and spares, and so forth that we have managed to put into the budget. You have helped us do that in order to get this proficiency by using what we have to the best advantage. We have to maintain a balance between modernization and readiness. We are concerned that we keep that balance to make sure that we do not slight readiness. Readiness is of course being prepared to fight with what you have today, and modernization is getting ready to fight tomorrow's battle.

QUALITY OF RESERVE FORCES

Finally, I would like to say, Mr. Chairman, that our Reserve Forces, we think, are the best in the world, and I think you know that we use them as well as any service might—the Guard and Reserve, the Air Reserve Forces. It is a fully integrated team. We do not say "we" and "they"; it is all together, 66 percent, two-thirds of our continental air defense fighters are flown by the Guard. One-half of our tactical reconnaissance is flown by the Guard or Reserve Forces. One-half of our strategic airlift and our tanker cargo crews are Reserve Forces. The Reserve Forces are flying the best systems we have today. They are flying the C-141, C-5's. They have got F-16's and A-10's. Next year they will be getting F-15's. So they have got the best systems we have, and they are doing well.

We have a big increase in what the Reserve Forces are going to do for us. This year we are increasing the equipment in several squadrons, fighter and reconnaissance squadrons. They have 18 aircraft now; we are going to increase those squadrons by 6 each. So that is a big increase, and that is a good way, a simple, cheap way to improve their capabilities, just to increase the numbers in those squadrons, flesh them out to 24.

Finally, Mr. Chairman, let me add to what the Secretary said. I think in my 30-plus years, this is the strongest Air Force I have ever seen, and it is because you all have supported us and given us the monies that we now have this Air Force. I appreciate your support.

Secretary ORR. Thank you, Mr. Chairman. We stand ready to answer questions that you and the members have.

Senator STEVENS. Thank you.

GUARD AND RESERVES IN HONDURAS

I would say to my colleagues, I think we ought to recognize a rule, maybe a 5-minute rule, so we can all participate. If there is no objection, we will do that.

I will notify each of you as we go.

Mr. Secretary, first we are just back from Honduras. I put in the record yesterday a list of the various units that were involved down there, and it does bear out General Gabriel's statement about the use of the Guard and Reserves. Why do you not do more in terms of trying to carry the message of the extent of the participation of the Guard and Reserves in maneuvers like that?

As a matter of fact, I have to tell you that I did not even know how many units were involved down there. It leaves the impression to some people here in the Congress that there is a permanent force down there. If you see the number of units that rotated in and out of those maneuvers, and understand the temporary assignments that were involved, it would belie some of the fears that we are setting up a permanent resident force down there in Honduras.

Why is there not much more said about it? Is it just something that you are saying but it is not being picked up?

Secretary ORR. I think a little of both. But I think your point is well taken, and I certainly in my speeches probably have not made as much of it, or in my press conferences as I should have. We have done some of that, but we will do more.

General GABRIEL. Sir, if I could add to that, I think it is probably the fact that, at least in my service, it has become routine that the Reserves are right there beside us. As you know, in Panama we have the A-7's, and the C-130's are around the world. Every place we go in a big exercise, we have a lot of Reserve Forces—and I am not talking just about the flying forces. There are a lot of support forces—medics, engineers, MAC aerial port people. This has probably become so routine with us that maybe we do not advertise it each time as being exceptional.

Senator STEVENS. Well, of the groups that were down there—I listed them—Air Force Reserve from Andrews; Air National Guard from New Castle, Del.; Air National Guard from Nashville, Tenn.; Air National Guard from St. Joseph, Mo.; Air National Guard from Warwick, R.I.; Air National Guard from Mansfield, Ohio; Air National Guard from Charleston, W. Va.; Air National Guard from St. Paul, Minn.; Air National Guard from Van Nuys, Calif.; Air National Guard from Anchorage, Alaska—which I was happy to see; Reserve unit from Willow Grove, Pa.; Reserve unit from Youngstown, Ohio; Reserve unit form Memphis, Tenn.; Air National Guard, St. Paul, Minn.; Air National Guard, Charleston, W. Va.; Air National Guard, Van Nuys, Calif.; Air National Guard, San Juan, P.R.; Air National Guard—as a matter of fact, I saw that C-7 down there.

That belies this concept that we have a permanent involvement. It shows, really, the striking impact and benefit of this activity from the point of view of training for people who just have not had realistic training. I do not want to belabor it, but I really want to urge you to, as we go into this next exercise, to try to get some acknowledgment of these units. We will be pleased to try and help you do that.

COST OF NATO INVOLVEMENT

Let me ask the one question I would like to get into now, though. Maybe I am getting to harp too much on the NATO costs, but as I look at this budget I am struck once again with the continuing emphasis on NATO and the cost of the NATO involvement.

That emphasis persists even though the great risks we have for actual involvement of our forces is not in Europe at the present time—it is in the Middle East and in Central America.

Should we not try to concentrate and prioritize the more likely emergency requirements that we have and then put in at least a lower priority category for the sophisticated NATO weaponry? When I look at this later category, we have got this joint tactical missile, the joint surveillance targeting system—both are exclusively for Europe; the Maverick, PLSS, the dual-role fighter, LANTIRN, AMRAAM. As we look at this in terms of trying to prioritize this year—and you are reading what we are being told, Mr. Secretary, about the probable budget limits on our committee—would you be able to give us any priority in terms of the likelihood of the need in the short term, the near term, for systems? The same systems are not needed in Lebanon, or places like Lebanon, the Persian Gulf, the Caribbean, or Central America, that are needed in terms of support of the permanent forces in Europe.

I think that is where we are going to have to make the value judgment this year. Would you like to comment on that?

Secretary ORR. Yes; and then I would really like to have General Gabriel, who headed U.S. Air Force's Europe, follow me on that part of it.

First I would like to say that one of our heavy priorities is airlift. That, of course, is equally applicable whether we have to fight in Southwest Asia, or in NATO, or in some other part of the world. We will have to airlift the Army. We will have to airlift the supplies. We will have to airlift our own fighter squadrons somewhere.

We have, as you know, stressed both the C-5 and ultimately the C-17, and some of the other programs that you mentioned—and I think specifically the dual-role fighter which General Gabriel just announced the selection on last week. We particularly studied the use of that in the Southwest Asia scenario, and also in the area north of Japan and above and its capability there.

I would say that when I arrived in 1980, Mr. Chairman, we had four four-star generals in Europe, and I felt that was disproportionate in the Air Force. We have reduced that to three. Just this last year we placed one of our four-stars in the Pacific. I think that shows some recognition of the emphasis you are speaking of to reduce the amount of concentration in NATO and to spread it around the world.

General Gabriel, would you talk on your experiences in NATO?

General **Gabriel**. Well, Mr. Chairman, I agree with you that it is probably the least likely place that we might be called on soon to fight a conventional conflict. But it would be the biggest challenge if we were called upon. It is like comparing say the strategic nuclear balance. That is the most unlikely place we will ever be challenged, but we cannot drop our guard there.

In NATO, I agree with you. We pay lots of attention there. That is a No. 1 priority after CONUS, in our view. I still think that is right. Those systems that you talked about—the LANTIRN, the dual-role fighter, the JTACMS, the Joint-STARS, and whatnot—they can be used in other areas to advantage, as the Secretary mentioned.

As a matter of fact, I think the dual-role fighter, in particular, in Southwest Asia, or say the Soviet Pacific, would be most valuable there. It would make a bigger difference there than it would in NATO. And the LANTIRN, of course, is valuable anywhere we fight. If you do not want to give up nighttime operations, you are going to have to have something like the LANTIRN to allow us to operate low level at night under the weather. Otherwise, you are also giving up a large part of the daytime under weather when you are not going to have a capability over there.

Senator **Stevens**. Well, my time has expired, General. I will go back into it more later. I would just comment as I close here that it seems to me that our role has to be to have a military capability that will enable us to avoid the necessity to fight. Certainly Honduras is that type of an operation, and I think it has been very successful. But it has stretched our capabilities. I will go into that later.

Senator Johnston.

Senator **Johnston**. Thank you, Mr. Chairman.

NUMBER OF B–1B'S PLANNED

Mr. Secretary, I want to congratulate you and General Gabriel on this high state of readiness for the Air Force. I am familiar with it. I think you are doing an excellent job with it. I also want to congratulate you on the competition on the F100 engine.

Secretary **Orr**. Thank you.

Senator **Johnston**. I think it is a great step forward for the Air Force.

You mentioned, Mr. Secretary, at least the report here mentions that B–1 is ahead of schedule and under budget. What are the plans on the number of B–1's considering it is ahead of schedule and under budget? Do you think you will recommend another 100 or so?

Secretary **Orr**. Senator, I have read in the press that Air Force officers, unnamed, have been suggesting that we would ask for more than 100 B–1B's. Let me assure you that does not come from the Air Force leadership. Neither General Gabriel nor I have any plans to go beyond 100.

The President's program is to build 100 B-1B's and to follow that phase-in with the advanced-technology bomber, and that is strictly our program. We have no other plans.

Senator JOHNSTON. You would recommend against that at this point?

Secretary ORR. At this point we plan to terminate at 100 B-1B bombers.

Senator JOHNSTON. It will be difficult to do with 60,000 employees, but——

Secretary ORR. Senator, we all know that in any program it is difficult to terminate. I have been here 3 years and have witnessed programs that stretched a little longer, but it is not in our schedule nor in our plan.

AIR FORCE BUDGET INCREASE

Senator JOHNSTON. Mr. Secretary, as I figure the increase in the Air Force budget, it is about 26.5 to 27 percent over last year. Is that about correct?

Secretary ORR. Well, there is about $5 billion in the 1985 budget which is not new money. In the 1984 budget it appeared in the Department of Defense line. That is accrual pay for retirement.

So first you have to take out that to make them comparable, apples to apples. We estimate, if inflation is also taken out, it is 15 percent real growth.

MILITARY BUDGET CUTS

Senator JOHNSTON. As you know, the size of the deficit is becoming an increasing concern. I think that issue is finally trickling down to the American public. I was reading this morning the cover story in Time about the deficits. If that ever ripens into a real political issue, as opposed to just a rhetorical issue—at this point it is only a rhetorical issue—and Congress gets to where they are going to do something about it, I think the military is going to have to come in for a pretty big cut.

As you know, last year the budget resolution provided for a 5-percent increase and projected out a 5-percent increase for this year as well. I do not know whether there will be any real attempt to do that this year.

If that was done to the Air Force budget and you were told you had to live under 5 percent, could you do it? If so, how could you do it? I know you would have to salvage some programs.

Secretary ORR. Well, may I first make the statement, Senator, that I make frequently in speeches? Obviously the media has drawn great attention to the size of the military budget, but very little attention to the fact that in terms of the relative gross national product of this country it is not a large budget. It is under 7 percent. It would be under 7 percent if we got the amount of money the President has asked for, compared to a budget that was between 8 and 9 percent of gross national product under Kennedy, and between 10 and 11 percent of gross national product under Eisenhower, at which time no one apparently complained very much that it was a large budget. So——

Senator JOHNSTON. Well, you understand that we have had some tremendous programs which have started since that time. Social Security has been indexed. The medicare program did not even exist at that time. Nobody is talking about doing away with those programs.

So it is really not a fair comparison to compare what it was under Kennedy and under Johnson. I have seen those comparisons, and that assumes that somebody would go back and eliminate these vast parts of social security and medicare, and they are just not going to do it.

Secretary ORR. Well, I understand that that is for Congress to decide, because it is congressional activity that has voted those programs, just as it has given us the generous budgets that we have had in the last 3 years. To say that the military could not survive on a 5-percent growth I think would be absurd. You would recognize it as such. We asked for 13 percent last year; we got 5. It hurt. There were programs that we did not get that we wanted very much.

I do not think the defense of the United States, frankly, is quite as secure as if we had gotten 13, but I could not sit here and tell you that we could not survive on it. There would be some very valuable programs that would have to be cut.

ELIMINATION OF PROGRAMS

We would have to take a hard look. We probably—and General Gabriel and I have faced up to this—would cut whole programs. I am not enthused about thinning down programs and stretching them out where the unit cost goes up. I think it is necessary to bite the bullet and say, if that is what Congress in its wisdom feels it can afford, then we must eliminate whole programs and not weaken the entire structure.

Senator JOHNSTON. I am inclined to agree with you that it would be a whole program, or a series of whole programs, that would have to be eliminated. There comes a point in the budget process where you cannot eliminate a whole program. It does not make any sense.

For example, on the two nuclear aircraft carriers recently—and I was for those carriers, and remain for them—but one of our colleagues came in, I think it was last year, and said let us try to eliminate the two carriers. He looked into it and found that they were so far along, the keels had been laid, the process was so far along that there was no way to eliminate the two carriers. As I say, I was not for that.

Can you name some programs which can be eliminated? You would not be for it, I know, but that could be eliminated this year but which could not be eliminated next year or the year after? Do you understand what I am saying? What programs are in the early enough stages now where it would make sense to eliminate the program if you could do without the system, whereas next year or year after it would make no sense to eliminate the program simply because of the pace of the development of that weapons system?

Secretary **Orr**. I think I would have to say that you would almost then he looking at new starts, or very recent starts. Two come to mind: We had hoped to buy in the 1985 budget three C-20's, which are executive aircraft utilized for transportation of personnel. That is a relatively new start. We leased three of them last year with the expectation of buying them this year.

While we had a start on money for the T-46 trainer, a trainer that we very desperately need because our trainers are T-37's and very, very old, that program is still just getting underway. Those come to mind immediately.

Senator **Johnston**. How about the B-1 bomber?

Secretary **Orr**. Well, the B-1B bomber, if we get the funding this year, will be approximately 80 percent completed. It is far, far, farther along that than the two nuclear carriers, on which only the keels have been laid.

Senator **Johnston**. I mean, you have got $8.2 billion for the current year if you did not put that in.

Secretary **Orr**. Well, you would have to decide, if you are not putting it in, are you stopping the progam right where it is, and you get one-and-a-half or two bombers off, and you will have, for example, $12 billion in parts scattered. Or are you simply stretching it out? In which case you would buy 100, but instead of buying them on our time schedule you would stretch them out, as I said, and you end up with much higher unit costs to get the same product.

That would be a decision that would have to be made, Senator.

Senator **Johnston**. Thank you.

Senator **Stevens**. Senator Rudman.

Senator **Rudman**. Thank you very much, Mr. Chairman.

OPERATIONAL EFFICIENCY OF AIR FORCE GUARD AND RESERVE

I just want to say to the Secretary and to General Gabriel that we certainly were very impressed with the Air Force activities that we saw this past weekend. The units that were down there, both Guard and regular Air Force, did a fine job. They obviously have a high state of readiness and a high state of efficiency. When you have a chance to be with them for a couple of days, you have a good view of that.

In the limited time I have, I have just two areas I want to talk about. One has to do with your engine competition that was just completed. I do not have any problems with that. I have full confidence that you did what you thought was in your interest under the proposal.

INDUSTRIAL BASE PROBLEM

I have a question that relates more to the industrial base than anything else, and it is really a question that I will address to Secretary Lehman, as well, and to Admiral Watkins. I put a list together here, and right now it appears that we have had a real turnaround. It is kind of interesting. Neither of these companies is located in my State. I am very interested in the whole industrial base question.

Presently Pratt & Whitney will be on the C-17, if it is built, the F-15; with your announcement, of course, you will have your dual-role fighter. I assume that would be Pratt & Whitney. The F-16A and B, and there was an option I understand for some conversion of F-4s to their 112C. So that would be the Pratt & Whitney share of the defense dollar at this time.

GE, under the present situation—and they make a very fine engine; I am not arguing about that—would have the F-14D, the F-16C and D, the F-18, the C-5, other major programs: AH-64, B-1, F-4, presently UH-60, HH-60, F-20, KC-135 re-engining, and of course the A-10 which is finishing.

That to me raises a very interesting question. I think the reason you got into the mess you got into with the F100 engine—and it was a mess—was because you did not have any competition. You have said that. You went to fix that, and I think you have done a good job in fixing that. You have now got this competition going, and you have ordered a 1-year contract and are going to take another look next year.

If we continue along the track we are going, do we not risk getting into the same relative position we did with the F-100? I wonder about a situation in which these two major manufacturers, with an enormous procurement from GE and Pratt and Whitney have essentially what is left over.

Secretary ORR. I am probably the one to answer that, because I was source selection authority on the engine competition. That is very true at this point. That is one reason we made it a 1-year competition. We want to keep both sources vital.

There is of course a great field outside of the military. For example, it was not too long ago before General Electric got this competition, and during the period when the B-1A was canceled, that Pratt & Whitney was far the larger, but General Electric still was viable because they had commercial business. Pratt & Whitney has Boeing business in one of the new Boeing planes, and I think they are a fine manufacturer, and they are here to stay also. But it is very much in our interest to see that both companies remain strong and viable.

Senator RUDMAN. Well, I just raise that point, and I do not need any more of an answer than that. As far as the civilian market is concerned, all the projections I have seen even with the 757, 767, there are some stretchouts on those. The civilian aviation markets have some real problems, and the U.S. Government is going to be the major factor in keeping these two companies viable. I think they are both excellent companies. They make excellent products. And I think it is very important that we keep some balance.

LANTIRN

General Gabriel, let me just ask you a few very brief questions on LANTIRN, which you alluded to briefly. Am I correct that that system, as presently configured, no longer contains any type of automatic target recognition?

General GABRIEL. That is true. The automatic target recognizer is in the development stage. I am not sure we will ever get it. We do not need it, in my mind, and it will be an affordability issue, if we do. But that is in the targeting pod, yes.

Senator **Rudman**. Well, that being the case, I am curious why we were briefed last year on the feasibility of the Air Force looking very closely at the Navy's FLIR program with the F-18. Then after we essentially granted informal approval to do that—since the differences other than scope of the view of the two systems is not that different—why are we continuing with LANTIRN rather than trying to get some consolidation on saving some of these dollars that Senator Johnston has been talking about?

General **Gabriel**. Well, we have looked at it. But as you know, we did not have any money to put it on the airplane and test it, the F-18 FLIR I think you are talking about. But when you do look at it, I do not think it would be as good for our purpose, and it would cost just about the same as the LANTIRN—the navigation pod and the targeting pod. Whether or not we'll go for the targeting pod we do not know yet because we have only recently started to work it out.

GROWTH IN LANTIRN UNIT COST

Senator **Rudman**. The reason I asked this is, according to the information I have, the growth in the LANTIRN unit cost in 3 years is from about $1.5 million a pod to $6.7 million.

General **Gabriel**. I will have to provide that for the record. We have quite different figures on that.

Senator **Rudman**. Would you please do that, because that is what I am basing these questions on.

General **Gabriel**. Yes.

Senator **Rudman**. If that is true, then I would certainly wonder why we did not look to having a dual service utilization of that.

General **Gabriel**. My figures are about half of that.

Senator **Rudman**. If you would furnish that for the record, I would appreciate it.

[The information follows:]

Growth in LANTIRN Unit Cost

Unit flyaway cost of a LANTIRN pod set is estimated to be $1.9 million in Base Year 1980 dollars and $3.5 million in Then Year dollars. Total program unit cost, which includes all RDT&E and procurement funding, is $3.0 million in Base Year dollars and $5.3 million in Then Year dollars.

MK 12 IFF SYSTEM

Senator **Rudman**. The last question on that is something that really kind of stuns me. I got into this a couple of weeks ago. Am I correct that the aircraft itself is going to continue to carry to the MK 12 IFF system?

General **Gabriel**. Well, that is what we have got now, but hopefully we will have a MK 15. That is why we are working very hard with our allies to get it.

Senator **Rudman**. How soon will you have that?

General **Gabriel**. Well, I cannot say, because we have got to get the Germans onboard in terms of the frequency band. The Germans are the main people who want to go another route.

Senator **Rudman**. Do you know why I asked the question? It is useless to have that system with its long reach if the IFF capability of the platform is 12 to 15 miles. Then it has to get in within normal conventional fighter range to decide whether or not it wants to fire its missile, and that long-range missile does not do us a lot of good.

General **Gabriel**. Yes; well, we have many other ways , some of them operational work arounds, and something I can talk to you about, a different kind of the IFF that we can work it with. But we do need a NATO identification system, which we do not have. My successor in Germany is screaming about that now. We need to get the allies onboard so that we can have a combined cooperative system.

Senator **Rudman**. Because if we are going to spend the money on the AMRAAM, we better darned well be sure we have a platform that can use it. It is like putting a set of sponge rubber gloves on a good heavyweight fighter. I mean, he may hit very hard but not do much damage.

General **Gabriel**. But if you have the AWACS and a lot of other systems that will tell you the good from the bad and sort it out, that is one way. We have all kinds of operational work arounds that would help us, if we do not have a consistent NATO identification system, or anything like it anywhere else in the world.

Senator **Rudman**. Well, I see my time is up. But I certainly would appreciate it if we could continue that discussion. Also, I am very interested in the true costs of LANTIRN.

General **Gabriel**. JTIDS, by the way, will help a great deal to sort those problems out, too: JTIDS class I terminal and JTIDS class II.

Senator **Rudman**. Well, we can talk about that at another time. Thank you, General Gabriel.

Senator **Stevens**. Senator Kasten.

Senator **Kasten**. Thank you, Mr. Chairman.

WEAPONS PLATFORMS AGAINST MUNITIONS REQUEST

Mr. Secretary, a number of people and several commentators have called attention to the fact that the defense budget over the past year or so, and I guess particularly this year, tends to favor weapons platforms at the expense of the actual weapons, and the munitions, or whatever they carry.

There was an article that was all around the country—I saw the one in the St. Louis Post-Dispatch that called attention to the GAC reports, and also to Navy reports, saying that Navy forces are short of the modern armaments that are carried on the expensive weapons platform.

I also understand that recently in the Armed Forces Journal there were reports that the Air Force has in its overall 5-year budget projection for its tactical air wings allocated huge sums, considerable sums for more fighters, but what seems to be a very small amount for new and advanced munitions.

Could you comment on this trend? And is it true that in your 5-year plan you are out of sync historically?

Secretary **Orr**. May I ask the General to comment on that?

Senator **Kasten**. Sure.

General **Gabriel**. I do not think so. We have made lots of progress recently in the air-to-air missiles. We now are up to nearly 100 percent in the infrared needs (AIM-9), and we are building of course as fast as we can in the radar missiles. And we hope for the AMRAAM. If it does not come onboard as early as we expect, we will continue the AIM-7 buy until it does.

In emerging technologies types of weapons, we do need standoff. We need standoff from our side of the border. We need terminal standoff when we get on the other side. The GBU-15 is a good weapon. We are putting a boost-glide on that in order to get an additional standoff in the terminal area. Once you break through say the SAM belt along the frontlines and get into the rear, you need the standoff outside the terminal threat, and that is no more than about 20 or 30 miles.

We are working on that. With the JTACMS that we are working on we will stand off 150-200 miles and launch it across the front with B-52's or fighters. We are putting considerable money into that.

I think the submunitions have been just as big a choke point as anything else. We do have some very promising submunitions now, say some senor-fused weapons such as—not to give any advertisements but—SKEET. In other words, you can drop a lot of them out of a container, and they will rotate and find their own targets, self-forging slugs to go against the tanks, IR-guided.

There are a number of systems like that that we have to package, and we are doing that now. Within the next 5 years we will have some pretty good weapons, I think, for standoff—throw them in the basket and let them terminally guide. So we have both the platforms to standoff on our side of the border, and we also have standoff once you get inside so you do not have to go through the ZSU-23's and the SA-3's in the target area.

BALANCE BETWEEN PLATFORMS AND NEW SYSTEMS

Senator **Kasten**. My question has more to do with the balance between the platforms and the fancy new systems, as opposed to the munitions and the armaments that they are actually shooting. It seems that maybe in this budget and in the 5-year projection we are going for a whole bunch of new systems, and not necessarily having all the backup. I am just looking back at history when Congress started cutting the defense budget last time. It was operations, maintenance, training, that kind of thing.

If we get ourselves all built up over 5 years with all these new weapons, are we getting ouselves set up for a real pinch on the other side?

General **Gabriel**. Senator, I think I worry about that as much as you do. We think we have a pretty good balance. We have put a lot of money into that area. I will provide it for the record. Truman, did you have a comment?

[The information follows:]

BALANCE BETWEEN PLATFORMS AND NEW SYSTEMS

The fiscal year 1985 budget carefully balances our investment in new weapon systems with the items needed to operate and sustain our present and planned force structure. We've had to make tradeoffs in both areas, but the budget reflects our best military judgement of how to apportion the risks of having to fight a war today and our need to counter the future threat. Some argue that we are not devoting a large enough share of our budget to operations. However, attempting to use percentages of the budget devoted to operations or investment to make the case that too much is being invested in weapons systems gives a false picture. During the 1970s, the Air Force devoted a greater share of its budget to operations than to investment. If our fiscal year 1985 funding is approved as requested, daily operations will be adequately funded, and we will build greater sustainability in aircraft spares and munitions. But our greatest shortage will be in new aircraft where we will buy less than two hundred new fighters when we need to buy 260 to 280 each year.

The fiscal year 1985 budget continues to emphasize the priority we assigned to readiness and sustainability in 1981 when we made it second only to correcting the strategic imbalance. For example, we will reach our goal of 21 flying hours per month for our fighter aircrews, increase the number of combat sorties we can sustain during wartime (which has already increased by 62 percent since 1981), and reach our stockpile goals for many modern munitions (more than doubling our 1981 capability in days of sustainability).

OTHER PROCUREMENT ACCOUNT

Secretary **ORR**. I think General Spangrud has the money that we have actually put into that.

General **SPANGRUD**. If I would comment on that, in the 3080 account, "Other Procurement," sort of a mundane account—it does not get the publicity of the major weapons systems procurement accounts—the munitions portion of that, where we have things like the Gator, and the Combined-Effects Munitions, is going from just under $1 to $1.4 billion in 1 year, which is over a 40-percent real growth, which is the fastest growing part of our budget. This account is growing at a faster rate than the procurement of the weapons systems themselves.

Senator **KASTEN**. So you just think that the Armed Forces Journal is wrong when it says that the allocations for the tactical air wings are out of sync?

General **SPANGRUD**. Yes, sir, I do. I participate in the Board structure, and I am on the Air Staff Board. We make our recommendations up to the three stars, and eventually get to the Chief and the Secretary. That is what we are looking for, a balanced program. We take a look, through mission area analysis, to determine which are weak points. Is it the spares that are holding us up? Is it people? Is it munitions? Wherever that weakness is, we put the bulk of the money in the 5-year defense plan.

So that is our job, and we think we are doing a good job of it.

General **GABRIEL**. I think there were some misunderstandings that we might have sorted out with the Armed Forces Journal since then. But the main thing—as I mentioned in my opening statement—is if there is a cut in our budget, we want to make sure that we do not, as you suggested, short that O&M account and buy systems that we cannot support.

SMALL ICBM

Senator **KASTEN**. Mr. Secretary, in just the brief time remaining, I want to switch to the small ICBM. There are still reports, and they were going on during the Scowcroft discussions, and they are still there, that a number of high-ranking Air Force officers do not think that the small ICBM should be built at all, or at least that they want to delay it as long as they possibly can, because the MX is the biggest thing in the store and the prettiest thing in the window, and they want to make sure that there is no problem with the MX.

What is the situation in terms of the Air Force's commitment to the development of that small ICBM? Can you assure us that you are going forward?

Secretary ORR. I think those officers that are speaking about not liking the small ICBM are the same unnamed officers who say we are going to build more than a hundred B-1B's. They are never named. They are not known to us. General Gabriel and I have a commitment to the small ICBM. As a matter of fact, the program office staff is growing very rapidly out in San Bernardino. We will name this June a general officer to head that staff. We are pressing ahead with many development contracts which are being let in the months ahead. It is part of the President's budget, and we are pushing on.

Senator KASTEN. Thank you, Mr. Chairman.

Senator STEVENS. Thank you, Senator.

Senator Weicker.

ENGINE COMPETITION

Senator WEICKER. I would like to get back to the question posed by Senator Rudman, because I do not think it was answered.

Let me say, by way of preliminary remark, I eschewed the temptation to politically criticize the decision that you rendered which was really inimical to the interests of my State, and I am not going to get to the merits of that decision because quite frankly we expect to hear, as you know, from the GAO as to the competition itself, and that will speak for itself.

I have no reason to believe that the report will not confirm what you have done is proper. If it has not been properly done, then believe me we will be here for quite a few hours—but I assume that it has been.

Secretary ORR. We are very anxious to have the GAO lock into it, and we have every confidence that our decision will be affirmed.

Senator WEICKER. I have every confidence in the fact that it was properly arrived at, and I repeat that to me this is not a political matter. I think all of us are as anxious as you are, Mr. Secretary, to achieve the best possible product and a reliable engine at the least cost to the taxpayer.

But again, I do not think you have answered the question of the Senator from New Hampshire. Let me address my remarks to that. You listed the various systems and the powerplant in those systems. From the way you are going now, why would it not be a matter of several years before we in fact once again have one predominant engine, except this time the name is General Electric? I see that list. I see what GE has, or is going to get. I see what Pratt & Whitney has or is going to get. I see one dominant engine company.

Now you come forth with the fact that the commercial market is going to bail them out. You know just as well as I do that there are some big problems right now down there that have nothing to do with Pratt & Whitney and have nothing to do with General Electric. They have to do with the fact that the commercial airline industry is unable to go ahead and generate the capital to make the investments which they should be making in both planes and engines. So it is sort of a never ending cycle of cutting each others fares. They do not have the capital. They cannot buy the equipment, so it goes on and on. There is no end to that.

You are not responsible for the commercial engine business, or the plane business. I am talking about military engines. Strictly in a military sense, why is not the answer to the question raised by the Senator from New Hampshire that within a 5-year period we will be back in the same situation we are in today where we have one company that dominates the industry?

ONE-YEAR OPTION

Secretary **ORR**. Oh, I can answer that very easily, Senator. We could have been in that position by my choice. The companies gave us a 1-year, a 3-year, or a 5-year option. If I had chosen a 5-year option on the split that I made, or a 5-year option all to GE, we would have been in that position. But I did not choose that option. I made it for 1 year, and we will look at the market again next year.

Senator **WEICKER**. What is the reason behind the 1-year option?

Secretary **ORR**. I think it is very much in the interest of the Air Force to keep competition. Fifteen years of sole source has not thrilled us.

Senator **WEICKER**. I am not critical of that.

Secretary **ORR**. I understand. I am very anxious to have competition. We got the finest engines, the best warranties we have ever had, out of competition, and I do not want to see it end.

Senator **WEICKER**. I am addressing myself to that subject but not to be critical of your decision or the correctness of it, or the general concept that you ought to have competition, or whether indeed there ought to be two engine manufacturers and not one. Whether I come from Connecticut or not, I am also a citizen of the United States. I am not so sure the sole source has been very good at all. But neither do I want to see it repeated with merely a different corporate name on the top. That is why I am asking you to pursue for a minute the Air Force's direction relative to the future.

Secretary **ORR**. It could have been that, if I had given a 5-year competition.

Senator **WEICKER**. Again, I repeat my question. Do you see, in other words, after the first year a possible shift in the distribution of engines between the two companies? What do you envision as possibilities?

Secretary **ORR**. Frankly, all I can tell you is that I intend to take another look at it a year from today. I would not make a statement this early in advance that would guarantee to any company any given share of it. I can assure you that we believe that competition is beneficial, and I would hate to see it end.

Senator **Weicker**. If you maintain your present levels of work, however, there is going to come a point where in effect they are going to reach that dominant situation that you are trying to get out from under. Is that not true?

Secretary **Orr**. That is something we will look at next year, Senator.

COMBAT, RESCUE AND SPECIAL OPERATIONS MISSIONS

Senator **Weicker**. All right. With existing and programmed resources, the Air Force has the capability to meet only a fraction of its combat, rescue, and special operations mission requirements. Is that true?

Secretary **Orr**. That is true.

Senator **Weicker**. Upon completion of the Nighthawk program and when all HH-60 aircraft become operational, will the Air Force be able to meet 100 percent of its combat, rescue, and special operations mission requirements?

General **Gabriel**. Yes, but let me caveat that, the "yes, but." We never have as many as we would like to have to cover all contingencies, if you are talking about simultaneous operations around the world. But when you look at rescue operations and SCF, and you look at the three big contingency areas we might fight, we have enough to support the wings that we have today, or to support those wings if we do happen to build from 36 to 40. There is enough in this budget of course to cover that. That is what it is based on, the number of crews we are going to have to go out and look for.

Senator **Weicker**. Thank you very much.

Senator **Stevens**. Senator D'Amato.

Senator **D'Amato**. Thank you, Mr. Chairman.

CONTROL OF SPARE PARTS COST

Good morning, Mr. Secretary. I read in your prepared testimony here that in 1983 there was much media attention on high prices for spare parts. It is important to note that in every instance this was uncovered by the Air Force, et cetera, et cetera. We have told our contractors that we are not going to tolerate overcharges.

That is nice, but what are we specifically doing to control this kind of situation that did make the headlines, and gave people who are strong supporters of a balanced strong military a very difficult time defending our military buildup. I would like to ask you: Specifically, what are we doing?

Secretary **Orr**. Let me give you a few illustrations. In all new contracts, we are attempting to put in a phrase which would limit proprietary rights on parts to 5 years after delivery of the first item. Now given that it usually is about a 2-year lead, that would be approximately 7 years from the time we sign the contract in most instances. I will tell you why we have done that.

We found out that literally thousands of items which should not be proprietary—little screws, little pieces of bent wire, washers—were stamped "proprietary" which meant we could not go out for competition on them.

We have accepted in the past too many of those items, and we intend to take a stricter look at it. We have set up competition advocates in every one of our five spare parts purchasing areas. We have given them the task of looking at items we are going to buy this year—particularly the higher priced items, working their way down—sit seven or more experts around the table and look at it. Is this a fair price? Does this look, just on the face of it, like it is reasonable?

If not, we will go back to the manufacturer and find out, or we will get competition on it. We have encouraged people to inform on prices they think are extreme to those competition advocates. We put the price on—yes?

Senator D'AMATO. On that, Mr. Secretary, when you say: "we have encouraged people to inform us when we think that the prices are out line"—is that what you said?

Secretary ORR. Yes.

Senator D'AMATO. That is Air Force personnel? Or who is that?

Secretary ORR. Basically we put the price on every part that an airman draws out to put on a plane, so that he can see what it is worth. And if he sees that it is $500, and he thinks it should be $5, we have got a place for him to phone. We also——

Senator D'AMATO. And he is going to be protected, even if he is wrong on the thing? No one is going to give him a tough time? Right?

REWARDS OFFERED

Secretary ORR. We are going to do more than that. We go around and give him a reward.

Senator D'AMATO. Well, that is good; because this poor guy, Spanton, Starrett gave it to Spanton pretty good, and Starrett we should throw out, but we are waiting for some administrative law judge to decide the case. Cap Weinberger should have fired him, because you know what happened to poor Mr. Spanton? You know what happened. Mr. Spanton was the auditor who came up——

Secretary ORR. I know.

Senator D'AMATO. They persecuted him, absolutely persecuted him. So I am delighted to hear that you are going to give somebody a reward for coming forward, because certainly in the Defense Contract Audit Agency, as long as you have somebody like Starrett——

Do I have congressional immunity here, Mr. Chairman?

Senator STEVENS. Pardon?

Senator D'AMATO. Can I say outrageous things here, you know, and not get sued? Like if I were to say that Starrett really has violated his public trust as the result of the way he handled Mr. Spanton, and persecuted the poor auditor, instead of giving him a reward? And he tried to force him out of the Government? And if anything, Starrett should have been fired a long time ago, yet we still coddle him. He certainly should have been suspended. Do I have congressional immunity for saying that kind of thing? Can I be sued? I cannot say that? [Laughter.]

TYPES OF REWARDS

But anyway, I am delighted to hear, I am really delighted to hear that. What kind of reward do you give them?

Secretary ORR. Let me give you three illustrations.

Senator STEVENS. Let me answer his question. He has immunity.

Secretary ORR. He has immunity? Fine.

Senator D'AMATO. Oh, wonderful.

Senator STEVENS. I am not sure you do.

Secretary ORR. All right. I will be careful. [Laughter.]

Senator, do you remember the famous little plastic cap that was picked up by an Air Force sergeant that costs $1,100? A very absurd price for that. We gave him a $1,000 reward for bringing it to our attention.

There was an original discovery that certain parts from Pratt & Whitney appeared to cost too much. That started the whole thing going. We gave that man a $10,000 reward.

We had a GS-5 in one of the Logistics Centers that was to buy curtains that go around the airplane that was being painted. It was sole source. She said, why should that be sole source? That ought to be out for competition. She put it out for competition and saved $40,000. We have her a $500 reward. I did it personally.

Senator D'AMATO. That is terrific. Would you like to run the Defense, as well?

Secretary ORR. No, thank you.

Senator D'AMATO. That is what we need, though.

Secretary ORR. I have got all I can do doing what I am doing. But we are trying very hard, Senator, to make it popular.

NEXT GENERATION TRAINER

Senator D'AMATO. We have to make you look good sometime, Ted, because now I am going to ask, Mr. Chairman, the other question. I heard with some dismay that, if there were some cutbacks, you would recommend the next-generation trainer be curtailed. You do not really mean that, do you, with all the money we are going to save with the next-generation trainer?

Secretary ORR. I told the questioner that it would be very hurtful.

Senator D'AMATO. Who asked that question? [Laughter.]

Well, I am delighted we are making some progress in this area of controlling expenditures, and in particular eliminating waste. We understand that this is not an easy situation, but I am delighted, Mr. Chairman and Mr. Secretary, to see that you are really moving in this area. I think the more innovations we have, the better the total effort we have in building an adequate defense in this nation. We must make certain that we are not overspending in areas such as you have illustrated. If we succeed, those efforts will be rewarded through the public having confidence in our defense effort and capability.

I am not going to ask any further questions, but I will submit some for the record, if I might, Mr. Chairman?

Senator STEVENS. Yes. The questions and answers will be inserted at the conclusion of the hearing.

Secretary ORR. I would just say, Senator, that we are working very earnestly on it. It has been a problem, and I think that while we have not ended it, we have taken substantial steps to correct it.

Senator D'AMATO. Thank you.

Senator STEVENS. As time goes by and that Senator moves closer and closer to this chair, I predict there will be more and more production of Air Force requirements in New York; that is clear.

Senator D'AMATO. Always cost effective, though, Mr. Chairman.

Senator STEVENS. Always.

AFFORDABILITY OF BOTH C-5B AND C-17

Mr. Secretary, I note that last year you sought 10 percent real growth overall, the DOD did, and the final product was about 3.5 percent the way we calculated it. The budget of last year authorized 5 percent. We were unable to achieve that.

Now we have a 13-percent real growth request this year, and we are again told that 5 percent would be sufficient. The rationale for that figure escapes me, particularly in view of the increases that Congress itself voted last year, which we will be discussing later.

You mentioned airlift as being one of the chief requirements, and we have a new start really in the program: full-scale engineering development for the C-17. I think you know, and your colleagues in uniform know, I have been one of the firm defenders of C-17 through its whole history. But I have got to ask you, in view of the fact that Congress made the decision to go to the C-5B at your request, can we now afford to have both of these systems in production? And is the C-17 such a high priority in your program that if we are forced to scale back because of the reductions that are predicted, would you recommend scaling back production of C-5B to get the C-17 into this full-scale development?

In other words, to put it another way, where are you going to bleed most—in the C-5B or the C-17? Now that is the tough one we have to make, and I think we ought to get you on the record.

Secretary ORR. All right. First, we have not planned to put them both into production at the same time. They are designed to be phased. As the C-5B is ended, it is like the bomber situation, then the C-17 would come on.

What we have now is initial research and development funds of $129 million. It is very difficult to say which we would prefer to have. We have at the moment a firm fixed price contract signed for 50 C-5B's, Mr. Chairman. And if that were voided, the price would not be the same price obviously that we have got now. The manufacturer would have every right to say, "Well, that price was based on 50, and it will be a wholly different price," which would be a matter we would then have to negotiate with him to see at what point it is worth our while to continue that production if we do not have the 50. It is not an answer that I can give you easily this morning.

Senator STEVENS. Well, the C-5 is scheduled for almost $2.2 billion this year. For 1986 it would be $2.5, almost $2.6 billion. Now the C-17 starts going up, however, next year. It is only $129 million this year. It would go up next year to almost $365 million. It starts up very rapidly.

Secretary **Orr**. It starts up, but its production is designed to come after the C-5 has stopped.

IMPACT OF DELAYING C-17

Senator **Stevens**. Well, I admire your ability to fence, Mr. Secretary. I really understand what you are saying, but what would be the impact on the budget—on your program if we delayed the C-17 for a year?

Secretary **Orr**. The C-17, as you well know, Mr. Chairman, is designed to replace the aging C-130's and C-141's, and that would simply slide it to the right and have us driving older planes for a longer period of time.

Senator **Stevens**. What would be the effect if we accelerated the C-17 into production and phased out the C-5?

Secretary **Orr**. It would be largely a financial problem of the burden of the cost of the C-5's, which had been a firm fixed price for the remaining ones; however many the Congress elected to have us buy would then cost substantially more.

I think we would want to give some thought to what the economies would be in that case. Mr. Chairman, I can foresee a situation where 35 or 40 C-5's could conceivably cost almost as much as 50 on an unfavorable cancellation of the contract.

Senator **Stevens**. I am inclined to agree with you, and I am inclined to agree that whether we like it or not, that we ought to look at C-17 as one of the things that has got to be delayed. It is just one of those things, the way I look at it. Maybe we are wrong; the committee may not agree. If we are going to cut down from 13 to 5 percent this year, your projections for next year could not be any more favorable; and if history repeats itself, that 5 percent equates to another 3.5 percent when we finally get through the conference. So I just do not know. We are out of easy decisions to make, Mr. Secretary, so I hope you will bear with me as I try to look at some of these things.

Secretary **Orr**. Mr. Chairman, we understand the problem you have, and we are not unsympathetic. Part of the complexity is that the very thing you are most interested in, which is other than NATO capability, is probably one that is carried by the C-17 possibly better. For the austere airfields, the Southwest Asia scenario, the C-17 might conceivably be one that is a better one.

Senator **Stevens**. Well, I even asked the staff if we could look at it from the point of view of what could be accelerated in production and reduce the unit cost, and what could be postponed coming into production so that it too could be acquired, and accelerated at a later date.

The C-17 appears to fit that in terms of its relationship to the C-5B. We got a good price on the C-5B. There is no question about that. I certainly would fight any attempt to cut the C-5B now, although I did not support the whole concept, as you know, in the past.

The same thing applies to the tanks, now. We will have to get into that with the Army.

MX MISSILE PRODUCTION

I do not want to take more of our time, but let me get to one question about the MX. The budget proposes an MX missile production of 40. One of the CBO's options for reducing the deficit would be to hold the 1984 production level. Could you tell us what impact that would have upon our strategic preparedness? Just how important is it now to ramp up production of the MX to 40?

Secretary **Orr**. General, do you want to discuss that?

General **Gabriel**. Well, it is a matter of how long you want to delay fixing, of course, the strategic imbalance. This is the one area, I think you know, that the Chairman of the JCS and the Chiefs say we do have an imbalance with the other side. It is the one force we might trade with the Soviets, the ICBM.

It is also a matter of deterrence, and arms control. I think all those things bear on your question. I do not know exactly the length of the slip you are talking about, or how much it would impact on the cost per weapons. But as for the Triad and our need to get something now to put those SS-18's and SS-19's at risk, there is a great sense of urgency to do that because we cannot do a very good job of that today with the Minuteman. So it would be, to us, a concern that we were not pressing on with the sense of urgency about modernizing our ICBM portion of the Triad that we are most weak in.

Senator **Stevens**. My time has expired again. As a matter of fact, gentlemen, we have to extend yours to 8 minutes, because I have taken it.

General, my rhetorical question to you, which I would not expect you to answer, is how many places in Honduras will you land that MX?

General **Gabriel**. Zero.

Senator **Stevens**. Senator Johnston.

Senator **Johnston**. Thank you, Mr. Chairman.

I have a few questions in writing.

SS-18'S AND SS-19'S

General, first of all you say we need to put the SS-18's and SS-19's at risk with the MX as soon as possible. Why is that?

General **Gabriel**. Well, it is a matter of deterrence. They have a capability with a small portion of their ICBM's to destroy a major portion of our ICBM's. We do not have that capability against their ICBM's. We do not have a balance.

Senator **Johnston**. Well, to put them in risk would be at risk only in a first strike?

General **Gabriel**. Well, again, I do not want to get into the scenario, but if you look at what the Scowcroft Commission said about the Triad, the other side cannot optimize and attack against the ICBM's and the bombers. They have got to go one way or another. And one of them is going to get out of there.

ASAT TREATY

Senator **Johnston**. General, or Mr. Secretary, or either of you: On antisatellite defense, or on the antisatellite treaty, there was a resolution adopted by either the Senate or the Congress saying, get a mutually verifiable treaty as soon as possible. There has been some talk that it is impossible to verify a treaty because you cannot determine what they have on their satellites. Would you comment on that? Is that possible? What is the hope of that?

Secretary ORR. General?

General GABRIEL. This is on the ASAT verification?

Senator JOHNSTON. On the ASAT.

General GABRIEL. It would be difficult, not impossible, unless you get the other side to agree to some on-site inspections and some other things. They have proposed to do that in the chemical on-site inspection. But you always have to question, when you look at the violations that we have found, and they have just been made public recently, the violations that we think have occurred with the SALT-II no undercut policy, we lose some confidence in whatever they agree to.

But I think it could be done possibly to our satisfaction. But it is up to the negotiators. Right now we would have a hell of a time with no more agreement than we have got today and national technical means would not suffice.

Senator JOHNSTON. In other words, you do not see any technical means of verifying satellite weaponry other than on-site inspection really at the time they make the launch?

General GABRIEL. That, plus you could pretty well determine breakup. If we have an agreement, certainly they are going to break up theirs and we are going to break up ours. We do not have much to break up. I am talking about the ASAT. And if you get a ban on the ASAT weapon, that would require on-site inspection for the breakup, yes.

Senator JOHNSTON. What do you mean by "breakup"?

General GABRIEL. To break up what capabilities they have now if you are going to ban everything. As you know, with the subs and missiles, they have pretty well conformed to SALT-II. There may have been some cheating on the margins, but they have pretty well stuck to the numbers requirements in SALT-I and II, and we can see that as they dismantle their subs and whatnot.

Senator JOHNSTON. So in other words, you are rather hopeful about the ability to negotiate an ASAT treaty with the Soviets given their willingness?

General GABRIEL. Well, yes. Hope springs eternal. I had to caveat that with the fact that you have got to recognize we have low confidence. When the Soviets go into negotiations, I think they go in with the idea of how they are going to manage to get around this limitation or that one. We know that, and I think we take that into account when we start the discussions.

Senator JOHNSTON. But given their willingness, it can be?

General GABRIEL. It could be. I would not want to give you any odds on what might come out of it, but anything could happen if you have the right attitude on the other side.

MX OUTLAYS AND BUDGET AUTHORITY

Senator JOHNSTON. Mr. Secretary, what do you have for Peacekeeper in BA and BO for 1985 and 1986?

General **Spangrud**. Budget authority?

Senator **Johnston**. Yes; outlays and budget authority.

General **Spangrud**. On budget authority, we have got $5 billion, and on outlays we have cumulative outlays of $6.393 billion, with $3.1 billion in fiscal year 1985, about half of which is prior year funding.

Senator **Johnston**. In 1986?

General **Spangrud**. In 1986, $3.763 billion, and I do not have the outlay figure with me on that.

Senator **Johnston**. That outlay would tend to grow in 1986, would it not, over 1985? Or would it?

General **Spangrud**. It may be leveling, because we are peaking in total.

Senator **Johnston**. On that level?

General **Spangrud**. Yes.

Senator **Johnston**. Somewhere around six?

Secretary **Orr**. You can furnish that for the record.

General **Spangrud**. Yes; I will furnish that for the record.

Senator **Johnston**. Thank you very much.

Thank you, Mr. Chairman.

Senator **Stevens**. Thank you, Senator.

[The information follows:]

Peacekeeper Budget Authority and Outlays

Requested Peacekeeper budget authority is $5 billion in fiscal year 1985 and $3.8 billion in fiscal year 1986. Total cumulative Peacekeeper, i.e., outlays since the Scowcroft Commission recommendations, will be $6.393 billion by the end of fiscal year 1985 and $9.934 billion by the end of fiscal year 1986. Peacekeeper outlays during fiscal year 1985 and fiscal year 1986 are expected to be $3.1 billion and $3.5 billion respectively. Fiscal year 1986 is expected to be the peak year of Peacekeeper outlays and will decline thereafter about $200 million and $500 million for the next two years respectively.

C-5B VERSUS C-17

Senator **Stevens**. Senator Rudman.

Senator **Rudman**. Mr. Chairman, I just really have one other question about this whole C-5/C-17 dispute that is going on quietly and not so quietly. Lockheed essentially says that the C-5B has all of the capability that you folks say you need in terms of austere airfields, low altitude drops, operating in snow and sand. Of course, that operational testing was cancelled quite some time ago back at the time of all the problems.

Now, I understand that they say to you, we will make a proposal, or they have made a proposal, that we would like to do this, we will pay for most of it, we want to prove that to you. So, that is an option.

Is that not something that would be a logical thing to do if it is going to be a low cost to see whether or not it works or not? I understand. I was not born yesterday, and if I want to buy a new Porsche and that is what I really want, and someone says that Ferrari is just as good, I might say: Look, it may be, but my heart is set on the Porsche and I do not even want to drive the Ferrari. It might change my mind. So, I understand what is going on.

Why not give them a chance to prove that they are wrong?

Secretary **Orr**. All right. I will tell you a few reasons. In the first place, I do not read their letter quite like you do when it says they will pay most of the cost. Lockheed said, we will pay our share, but you furnish the plane and the assets, and I was not quite able to see what the cost was going to be.

In the second place, there are some of the things that they have stated that their plane will do which we do not even need to test; we will say yes, it is a given, it can do that.

In the third place, some of the things they say they want to do—for instance, low-altitude drops—they want to do by taking the doors off of the plane. Now I do not envisage flying a plane a long distance with two tanks in it and no rear doors, given that it might do the drop. That is not the answer.

The fourth thing is that many of the problems—and General Gabriel will discuss these—are what happens when the plane is on the ground? It completely ties up an airfield while it is being loaded.

Would you talk about Bitburg, for example.

General **Gabriel**. Yes. That was the one point I was going to make. In Bitburg—there are many other airfields like it in Germany—you land the C-5 and you do not turn a wheel until it takes off, because you cannot get it off the runway. There is no parking space at a lot of those fighter bases that you can move it off and do everything else that you need to do. Bitburg is fairly typical—we have got our number one F-15 assets there. It is a good base.

But this is the problem. That is a "hill" station with no room for off-runway operation, certainly, and maybe it is different from those in the desert, and you can pull off in the sand with the C-5 and maybe operate; but overall, this is one of the big differences I think that bugs us about the C-5 operation up close to the lines.

SIZE OF C-17

Senator **Rudman**. And of course the C-17, I never really had a good handle on how big that was until recently. That is a very big airplane, as well. That is not any small airplane. In fact, that is about the size of the KC-10; is it not?

General **Gabriel**. About that, right. It is not as big, but you can operate on these bases I talked about like Bitburg.

Secretary **Orr**. It backs up.

Senator **Rudman**. Well, I do not want to get into the middle of this obviously interesting battle that is going on, but it is just that it seems to me that we all agree that we have to have more airlift, and the airlift might even be of a different character with what General Wickham is talking about with his light divisions. There may be another look at what these loads are going to be, and what the legs are going to be.

General **Gabriel**. His light division will go through the eye of the C-141, all of it. He is gearing it to that.

Senator **Rudman**. So I simply would say that maybe you do not want to do it, but if it did not cost very much—and we have got some real tough decisions to make here in terms of money, and whether it is going to be some airlift that is going to do it, or some airlift that is going to cost more and is not going to do it, I favor neither company but I certainly would hope that at the very least you will take a long, hard look at whether or not you want to give it at least a look-see or not. Because it may not be. It may not be whether you are going to get the C-17 or C-5. It may be a question of whether you are going to get anything at all over the next couple or 3 years in terms of what we are facing in terms of real growth of these dollars.

As you know, I have been a strong supporter of the airlift. So I would just leave the message that I hope you look at it.

Senator Stevens. Thank you very much.

Senator Kasten.

Senator Kasten. Thank you, Mr. Chairman.

ARMS CONTROL VIOLATIONS

I would like to follow up on Senator Johnston's comments about the arms control efforts, and particularly with regard to you seem to say two different things, General. At one point you said the Soviets had been working with us pretty well. They had been in basic compliance. Then you said, but we have to recognize that every time we sit down, they are trying to work out ways around what is going on.

There was recently, as you know, a report by the President to the Congress which we asked for over a period of about 2 years. Finally, we got the report about the Soviet violations of arms control agreements. Senator McClure and I have asked Senator Stevens to schedule hearings on the military implications of these violations, and I am hopeful that we will have those hearings.

But it seems to me that, from the briefings that I have had, most of those violations are ones that would relate to specific problems that you have to deal with. So we can take a couple of them off. If we do not talk about chemical warfare, and if we do not talk about nonprior announcement of military exercises, and we will not talk about a couple of other ones, but when you look specifically at the ABM type radar, when you look at the changes they are making in there, when you look at what they are doing in terms of eroding missile data and of hiding the telemetry, now those two issues I think should be of tremendous impact on the U.S. Air Force as you start to plan.

Another is the testing of the second, what we believe to be the second ICBM, the SS-X, 25. Lastly, the continuing deployment of the SS-16.

Now it seems to me that those four things in particular create tremendous, tremendous problems. No. 1 is the basic question of whether it is worth it to negotiate with them because you cannot trust the Soviets. Let us put that question aside, because I think we are going to negotiate with them, recognizing what you said that they are always trying to find ways out.

But here we have now got sound evidence in at least four areas that I think should concern the Air Force that they are just plain not abiding by the agreement; that they are getting around a lot of other ones. But you are either hiding telemetry, or you are not hiding telemetry, and it is pretty clear that that is what is going on in a number of these missile tests.

Specifically, General or Mr. Secretary, or both of you, what are the military implications of these specific violations? And what are the budgetary implications of these violations? And which of these violations, in your opinion are the most serious?

General **Gabriel**. Well, you have mentioned serious ones, the chemical and the Helsinki accords. Those we know for sure that they have done some things they should not have done. There is some question about the SS–16. I do not think that is the most serious one. They have only got the test assets there around the test site, and we could not hang them with that. We have not seen them. So we cannot say for sure—we can say maybe it is probable.

SERIOUS PROBLEM OF ENCRYPTION

The most serious ones, I think—there are two of them: encryption and the ABM radar. Encryption is tough. OK, are they violating or not? Certainly they are encrypting what we think we need. The way the agreement reads, each party will not encrypt something the other side needs in order to verify that the other party is abiding. The language is a little loose. We have not been clear enough, and we have not made it simple enough in the language of the agreement. So, they will say, "OK, what is it that you are missing that we are encrypting?" If we tell them that, they know what we can pick up and what we cannot. They are playing games, I think.

Senator **Kasten**. They are clearly violating the spirit, if not the letter.

General **Gabriel**. They are violating the spirit.

Senator **Kasten**. And that means, in the future how can we——

General **Gabriel**. But Ambassador Ellis goes over in the SCC and lays this on them, and they will say, "Well, no, we are encrypting but not all of it." It is a touchy one. We know that they are violating the spirit and the intent of the agreement. We know that. And that is the most serious one, I agree. That plus the ABM radar, the phased array radar that they have inside their country, when the agreement was that if you have such as this it has to be on the perimeter. The radar certainly is not; it is in the middle of the country.

What we can do and what we are doing, of course, is improving the penetrativity of the weapons with penaids. We have to do that, because we can now expect that they are going to have some other capability besides the one they have around Moscow to have an ABM capability against us. Those are the kinds of things we can do.

The SS–X–25 is a probable violation. We do not know. They say it is a modified SS–13. You are allowed, within certain parameters, improvements—5 percent here and there—in terms of launch weight but you have got to use the same propulsion, and in terms of RV diameter, the length, and so forth. They say that it is within parameters. We do not think it is. But it is on the margins whether or not that is a new missile. We think it is. We would have to get onsite inspection, I think, to say for sure that it is.

But those are the kinds of things we are working with. It does lower our confidence that we are going to be able to trust them completely.

At the same time—I said two things—they are breaking up in order to keep to the maximum limit of the ICBM's and MIRV systems. They are breaking up to maintain the total numbers and subsets. What they are playing around with of course is the modernization of those systems that they have, and the ABM radar, and the encryption.

Senator **Kasten**. I appreciate your answer to my question.

Mr. Chairman, I do not have any further questions at this time, except to say that I am hopeful that we can have a hearing at whatever level of classification would be the most productive to the committee on the military and the budgetary implications of the Soviet violations of arms control agreements. I think that that would be helpful, because it seems to me, especially with the two that we have ended up talking about the most, the encryption or encoding of the flight data and the radar, it seems to me that they could have tremendous significance in terms of what we had to do. An awful lot of it is in the Air Force budget.

So I am hopeful that we can have those hearings, and I thank you very much, Mr. Chairman.

Senator **Stevens**. We will establish a date for those hearings early in April. We are working on that now.

TROOP STRENGTH LEVEL IN EUROPE

Mr. Secretary, I have noted that we do note these comments of commanders in the field, and certainly they are entitled to first amendment privileges as well as anyone else. I noticed the comment that came from a commander in Europe of the U.S. Air Force in Europe concerning the caps on our troop strength there.

In 1982 when we did put a force cap on our forces in Europe, there were 315,600 troops in Europe. At that time, the Air Force had 81,500. That was for fiscal year 1982. In 1983, that went up to 85,100; in 1984, it is estimated you have got 88,500; and the fiscal year 1985 budget calls for 91,900.

You have had an increase of 10,400 in a total troop strength level in Europe. Even with the GLCM waiver of 2600, that would have increased the troop strength to only 83,100. The general criticizes the Congress for having authorized new systems at the request of the Air Force without giving additional allowances for troop ceilings.

Let me ask you, again, it is sort of rhetorical, but have we increased or commitments to the NATO forces since 1982? Do we have an overall troop level commitment increase?

General **Gabriel**. Well, for the Air Force it is essentially the same. What we have been doing is adding what we call force multipliers. For example EF-111, the only jammer that we have. If you are going to have one, you ought to have it over there, because that is where you would have the electronic warfare to fight.

The TR-1 you certainly need, because that gives you 24-hour surveillance of the other side. There are two other systems, plus the

GLCM, that we are putting in there that we will trade for structure. And if it comes down to that, that is what will happen.

In other words, you are going to get more out of what you have got over there by using these systems that will help you fight better with what you have got. So we hope we will be able to add them. If you have a cap and we cannot, then we will have to take out some force structure and support less.

What we are trying to do, Mr. Chairman, is of course—and this is an extension of what we talked about earlier—we are trying to raise the nuclear threshold over there by increasing of course our conventional capability as a whole. As you known, we are trying to encourage our allies to pick up as much of the burden as possible.

But we do need to put in these force extenders because they are more important than what we have there if it comes to that.

Secretary **Orr**. May I just add, as I mentioned to Senator Johnston, both General Gabriel and I feel that if the Congress feels that a cap or a cut is necesssary, we are going to try to bring entire force structure pieces home. We do not want to just lean it down till it is 80 or 85 percent efficient. We are bringing the OV-10's back to the United States.

EXORBITANT NATO COSTS

Senator **Stevens**. Well, I keep meeting with representatives of the NATO countries, and they keep asking why I harp on these costs. I do not see any of the NATO countries, with the possible exception of Germany, really putting the emphasis on modernization that we have. The Air Force has not had over a 12.5-percent increase in manpower since we thought we had limited our manpower.

I noted that the British reduced their manpower in Europe to 55,000, which is their minimum commitment that was in the days when President Eisenhower was in office. We continue to increase our commitment of troops over there, and once we commit them they believe that they are fixed and permanent and as secure as the Maginot line was.

We cannot move them after that. They refuse to allow us even to consent to move them on a temporary basis to places like Lebanon, as you know. Now it does seem to me that we have to find some way—and I will be happy to take another trip over to meet with General Minter, if that is the case—but we have to find some way to get an understanding as to why we are trying to impose these limitations, to make our NATO Allies live up to their commitments to NATO as well as we have lived up to those commitments.

When I find, as I did in this recent trip to Honduras, that Honduras does not charge us for the bases we share with them Honduras does not make us fill in the tank traps or pay for the damage to the property caused by our exercises. When we pay more to Germany alone in 1 year than the net cost of 2 years of operation in Honduras, then it encourages me to think that Honduras is a pretty good thing for the American people, and maybe our European allies ought to realize we have got some other places in the world that we can exercise where we do not get charged these exhorbitant fees.

A friend of mine tells me we contribute more to the railroad system in Germany than we contribute, on a Federal basis, to all the railroads in the United States—and that is because of the freight bill we pay over there. We also pay for damage to their roads because we move our equipment for exercises. It does seem to me that there has got to be a continual reassessment of our obligations there, and I want you to know that as far as I am concerned, unless we can find some way to have a real long range plan as to what we are going to do with the forces over there, I am going to continue to keep a watch out for this increase in troop strength.

As you have gone up so dramatically in the Air Force, the Army has been held down. The Navy we now do not count. That is how we took care of them. We do not count them when they are on board ship. So the troop restrictions is really sort of like a feather pillow, Mr. Secretary.

Secretary **Orr**. Well, Mr. Chairman, let me say that I think you are very accurate in the fact that the Air Force has gone up and the Army has not, and that has been the choice of the Chairman of the Joint Chiefs of Staff with the cap that was placed. It was up to him to decide what forces he wanted in Europe and what he did not. It has been his choice to strengthen the Air Force and hold the Army down. It has not been our option; it has been in the Joint Chiefs.

General **Gabriel**. And General Rogers, of course, will eventually handle the balance.

ARMY'S NEW LIGHT DIVISION

Senator **Stevens**. Well, we have great respect—I know I do personally—for all of the people who are involved in that effort over there. It does seem to me that we have got to start dovetailing the moneys we are making available for your area of the Department of Defense to those of the Army. The Army's initiative on the new light division I think is—I do not think I have ever used the word in relationship to the Department of Defense—but it is an exciting departure from the past.

We would like to see that come along. It means that we ought to concentrate on airlift, for the Air Force if that is going to happen, and we ought to know what we are going to do in terms of airlift. As you indicate, the existing airlift—the C–141's—meet the light division lift requirements. We were really intrigued by that. Because if we could have the Army come to us and tell us we do not need so much airlift for these outside planes, maybe we could delay some of those more expensive planes for a little while and accomplish the budgetary objectives without reduction of the force levels for anybody.

But as long as we have got these budget ceilings on us, I do not know how we can expect to have an overall increase in the Air Force personnel in Europe in the coming years as dramatic as it has been since we tried to put a cap on it. As I indicated, you have gone up with 81,500 to 91,900 during the period of restraint. What would have happened if we had not had any restraint?

Is General Minter correct that we really have restricted our Air Force effort in Europe?

Secretary **Orr**. Well, we are bringing the OV-10's back. We canceled Red Horse, did we not?

General **Gabriel**. The civil engineering unit, and the OV-10's. Two squadrons of them have been brought back, yes. We are trading out already for those we are moving in.

Senator **Stevens**. We will continue that. I see my friend Mr. Andrews is here.

Senator Andrews.

Senator **Andrews**. Thank you, Mr. Chairman. My apologies for being late. I was over at the authorizing committee where they are holding hearings on the warranty law that came out of this committee.

WARRANTIES ON ENGINE CONTRACT

Mr. Secretary, as I understand, the derivative fighter engine contract was bid, except, as you pointed out, the warranty has enabled you to save $2 or $3 billion in the life of this contract. We appreciated those comments and would be interested in any other comments that you might have on it.

As I understand, you certainly have implemented these warranties very well, and I would appreciate any comments you might have on it.

Secretary **Orr**. Thank you, Senator. The saving really was in the competition. We got excellent warranties, however, and time will tell how much they have saved us. I would like to say that in the C-17 which the chairman has been talking about, for which I was source selection authority 2 years ago, we got a very fine warranty for cost per flying hours. We got one on the new trainer.

We have been working on warranties for a long time.

Senator **Andrews**. And there is no problem in your mind in obtaining these warranties. You have been successful in the C-17, the derivative fighter engines, and the rest, in implementing the concept of the warranty.

Secretary **Orr**. Well, we put into what you might call the boilerplate language of our contract many months ago that any manufacturer must give to the U.S. Government an equal warranty that is given on a similar product to any commercial user on any other government. So we at least get the same warranty if we buy a car or truck that a civilian does; or if he gives a warranty to a foreign government, or a State or a county, we get an equally good warranty.

Senator **Andrews**. That is right. That is precisely what this committee wanted to do 2 years ago when we passed the law for the requirement on fighter engines, and last year when we did it on all weapons.

Now, Mr. Secretary, you could sure assist us if you would explain why there seems to be opposition, and even repeal attempts, against this warranty law coming from somebody down in the bowels of the Pentagon. Cap Weinberger told us in the Budget Committee that he is all for warranties. You have told us not only just now but in the press that warranties are working. Where is this opposition coming from?

Secretary **Orr**. Senator, I would like to say—and I have not been certainly leading the opposition; I have been leading the fights for warranties—I would like to——

Senator **Andrews**. Glad to have you on our side.

Secretary **Orr**. Thank you. I would like to have some more flexibility. Now the warranty that we got from one of the manufacturers will be an excellent warranty in this alternate fighter engine. The warranty we got from another manufacturer I think will not be cost effective. If I had had more flexibility, we should have accepted one and not the other.

Senator **Andrews**. Well, when you have looked at the law, the law gives you a good deal of flexibility. You can design the warranty to fit the particular weapons system.

Secretary **Orr**. It did, except in this particular instance. That is the general law. In the alternate fighter engine, there was a specific law that required the warranty.

Senator **Andrews**. That is right. So you feel that you can work with——

Secretary **Orr**. The general law would have been more beneficial in this particular instance than the specific law which designated the fighter competition.

Senator **Andrews**. Fantastic. I appreciate our general law. I hope you will tell your colleagues down in the Pentagon. I had better quit while I am ahead, Mr. Secretary.

GRAND FORKS POWER SUPPLY CONTRACT

Let me ask one quick question that has to do with North Dakota. On September 30, 1983, the Air Force gave notice that they were cancelling the existing power supply contract at Grand Forks Air Base with the rural electric cooperative that served that area, and they were going to wheel power from some Federal hydropower allocation. But the plan would cost regional rural electric consumers $3 for every $1 the Air Force would save. You later withdrew the cancellation when you discovered, one, that you did not have the right to transfer the hydropower allocations; and two, that you had no way to deliver the power if you could get it.

Now my question is: They are all kind of waiting out there, Mr. Secretary. Have you dropped this ill-conceived plan? Or is it still out there hanging over their heads someplace?

Secretary **Orr**. Well, Senator, I would have to say that first I did not think it was ill-conceived; and second, I did not know we dropped it. I did not know, at the moment, that we did not have the right to wheel that power. I understood, and I will have to go back and check, I understood when the dams were built they gave the Federal Government the right to buy that power and wheel it.

And while we had been allowing it to go into a local—and your area is not the only one—into a local cooperative or power company and be mixed with all other power, and had been buying at the mixed rate, that we had the right under the law that built the dam to draw it direct. Now I will go back and check the law.

Senator **Andrews**. Well, we understand that there is a question on the availability of the power, and then, too how do you get it there. The question we have, Mr. Secretary, is that over the 20-

year life of that base, these rural electric co-ops have built up an awful lot of infrastructure to deliver the power to the Air Force at the request of the Air Force, and they have given you, with the suggestion of some of us in the congressional delegation, ways of lowering your heatings costs, and doing a bunch of other things with some rather unique and innovative means of setting up a rate structure up there.

Now to arbitrarily pull back a load that leaves them with unloaded lines that have then to be passed back to the civilian type consumers up there gets to be pretty hairy in an area where they welcome your trucks, and missiles, and the rest on the road, and they also welcome you as good neighbors. They cannot understand why they have to pay this much more on their own rates, if you suddenly change the rules of the game after they have been in effect for 20 years.

Secretary **Orr**. I think, Senator, that is by far the more difficult argument to answer. The other problem that occurs is that under budget constraints, you want us to look for every way possible to save money. When we find that we have a way to save money that we have not been utilizing for 20 years, it is a little difficult as a management to say, well, the simple fact is we have not taken advantage of the low power rates we should have taken advantage of for 20 years, and now we will not take advantage of them for the next 20 years.

Senator **Andrews**. I think, Mr. Secretary, there are ways for people in your shop and my shop to work together and figure ways of wheeling this power, if you do have a block of low-cost power, through the existing facilities, since you do not want to reconstruct powerlines, and there is no sense in having unused powerlines that were built to serve the Air Force floating around out there having to be paid for by the civilian people, and all the problems that that entails. So I would hope that, if the thing is not dropped, that we find a way of negotiating it through so we can meet the concerns that we both have.

Secretary **Orr**. I believe we are currently in negotiations.

Senator **Andrews**. We are. I had hoped that it had been dropped. Pending that, your cooperation and negotiation will be greatly appreciated.

Thank you, Mr. Chairman.

Senator **Stevens**. It is nice to see you here, my friend.

Senator **Andrews**. It is good to be here. John Tower had me there for an hour and three quarters. [Laughter.]

Senator **Stevens**. The initiative on the warranties I think has great hope, and I really do not know what all the huzzah is about because of the agreement the Senator from North Dakota made concerning the waiver of that provision in the interest of national security.

Senator **Andrews**. Well, I think it is significant that the Secretary just told us that the second base law, which we passed second, which gives the leeway to the Defense Department, is by far the best one. We thought it was all along.

Secretary **Orr**. Well, it is better than the one that was on the specific engine competition.

Senator **Andrews**. Yes; because in that specific one we limited it to the 3,000 tactical cycles, which was dealing with a lot more specific data; but here it is general, and the fact you feel you can work with it is a big plus.

Thank you.

Senator **Stevens**. Mr. Secretary, I have a series of questions I would like to submit to you for the record.

EQUIPMENT FOR RESERVES

Senator **Stevens**. Before I close, let me emphasize this committee's interest in equipment for the Reserves. I note that the airlift master plan that estimated that additional C–130H's would be procured and added to the Reserve Forces. I note that you have not requested or projected any requests through 1988. Yet, they were the people who were flying those C–130's that we saw and flew on in Honduras over the weekend.

Now why has there been no additional procurement funds earmarked for that kind of equipment for the Reserves?

Secretary **Orr**. Well, in our last year's requirement from the Congress, we are developing plans to transfer C–141's to the Guard and Reserve, and we will note that in this year's proposal we propose to transfer C–5's to the Guard and Reserve. Other than that, we simply had budget priorities and did not add C–130's, other than two C–130's for the active.

STAFF PREPARED LIST OF SYSTEMS

Senator **Stevens**. Let me state to you that my instructions to the staff have been to prepare for the committee's review an approach to this 5-percent level, which I think is a realistic estimate at this point, although we certainly will try to achieve a higher rate for budget authority. I want you to know that I consider the fight to maintain the 9-percent increase on outlays to be of an even greater necessity for this year, particularly for the Air Force.

But my request to the staff has been to prepare us a list of all systems for each one of the services indicating the rate of production for 1984, and indicating where there is a request for increased production rates and where there is an intent to decrease production rates. We want to look at those to determine where it might be cost effective to continue existing rates of production, instead of going either up or down, and to see what will happen if we went that way.

I wanted to give you notice, as we will the other services, that we are going to look at it that way. In the first place, I think there might be some stability if we must again approach the 5-percent budget authority level to try and see what we could do if we maintained the existing authority level except for those items of very, very high priority.

So if you want to assist us by telling us, either on or off the record, what is your very, very high priority items once we get those listings which we will prepare with your cooperation, I hope, we will be pleased to have them.

Now this committee last year alone increased the funding for the Department of Defense by $4 billion over the amount that came out of the House. We are going to do our utmost to maintain the funding level for the modernization program, but it is increasingly difficult to do if we cannot get together on what are the priorities. That happened to us last year on the floor, as you remember, and we hope that we will not get to that position this year where, in order to maintain our negotiating position in conference, we faced the problem of being second guessed by the Department through other spokesmen on the floor.

So I urge you, let us see if we cannot get together this time, because I think it is going to be tougher to hold the budget level this year than it was last year.

Secretary **Orr**. Can I say, we very much appreciate your cooperation and that of the committee. We recognize how firmly you fought for us.

SUBMITTED QUESTIONS

Senator **Stevens**. I appreciate that, and we will be submitting these questions to you, and we will appreciate your response.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

C-5/C-17 AIRLIFT PROCUREMENT

QUESTION: Your Airlift Master Plan states that the annual operating and support costs per aircraft are $9.7 million for the C-5A/B and $7.4 million for the C-17 in FY 82 dollars. What are the corresponding hourly operating costs?

ANSWER: Current information indicates corresponding hourly operating costs in FY 84 dollars are as follows:

	C-5A	C-17
POL	$3,470	$2,191
Replenishment Spares	$1,410	$309
Depot Maintenance	$1,275	$386
Base Maintenace Supplies	$890	$280
Total	$7,045	$3,166

C-5 PRODUCTION CONTRACT

QUESTION: What are the details of the current fixed price C-5 production contract? What are the annual procurement quantities and available options above and below? How much nonrecurring costs are being spread over the term of the contract?

ANSWER: The current fixed price C-5B production contract was signed on 31 December 1982 for one aircraft and four annual options to buy the remaining 49 aircraft. In November 1983, we exercised the second option for four aircraft. In FY 85, FY 86 and FY 87, we will buy 10, 16 and 19 aircraft respectively. The contract will allow one or two aircraft to be deferred from FY 85 and/or FY 86 to FY 87 without requiring contract renegotiation. However, due to inflation, such a deferral would result in an increase of total program cost.

Nonrecurring costs are spread over the first three years of the program (FY 83, FY 84 and FY 85). The FY 85 nonrecurring costs are $108.4M.

STRETCHING C-5 PROCUREMENT

QUESTION: How much would the costs go up by stretching C-5B procurement over two additional years and capping production at nine aircraft per year?

ANSWER: The cost of stretching C-5B procurement over two additional years and capping production at nine aircraft per year is difficult to estimate. This stretchout would require renegotiation of the present firm fixed price contract. We would expect program cost to increase for the following reasons: inflation resulting from procuring aircraft in later years than in the current program; a loss of the cost advantage obtained through phasing the production of C-5Bs with the C-5A wing modification program; and buying aircraft well below the most economical rate which will be achieved under the current contract. An accurate cost impact could only be determined after negotiation with Lockheed.

AIRLIFT PLAN

QUESTION: Describe the airlift plan used to support the rece Grenadian and Big Pine operations and how those operations might ha been done differently if the C-17 had been available for use by the A Force.

ANSWER: In both the Big Pine and Grenadian operations airli planning was restricted by airfield characteristics in the objective area.

During Big Pine, troops and equipment were flown to La Mesa airfiel and later transshipped via C-130s to Tegucigalpa, Palmerola, an Comayagua where the troops and equipment were required. Transshipmen was necessary since these airfields were not suitable for either C-141 o C-5 operations. Had the C-17 been available, its performance characteristics would have allowed direct delivery and eliminated the need for transshipment, thereby decreasing force closure time and eliminating the required C-130 support.

During the Grenadian operation, airfield restrictions prevented using the C-5 at Point Salines and Pearls airfields. Point Salines was unusable due to ramp availability; Pearls was too narrow for C-5 operations. Had the C-17 been available both of these airfields could have been used to move equipment and supplies onto the island. In addition, had the C-17 been available, it would have provided an alternative to the amphibious assault used to secure the northern part of Grenada. While this capability may or may not have been used, the ability to prosecute either an amphibious assault or to introduce assault forces by air to secure the same objective area would have complicated enemy planning.

AIRFIELD ACCEPTANCE OF AIRCRAFT

QUESTION: What percent of the airfields proposed for use in worldwide contingency planning could accept the C-5A/B; what percent of the airfields would have to be closed to other aircraft operations during C-5 operations? What are the corresponding percentages for C-17 operations?

ANSWER: Based on the worldwide summary of airfields at least 2000' long and 90' wide, which was completed by the CX Task Force in 1981, we estimate the C-5 could operate into 10 percent of such runways routinely. Depending on the availability and condition of off-pavement areas to allow C-5 turn-around, acceptable runways could approach 30 percent. The C-17 could routinely operate through at least 65 percent of such runways without leaving pavement and could use additional (unsurveyed) airfields only 60' wide.

Based on surveys accomplished at a large number of otherwise acceptable C-5 and C-17 airfields, we estimate the C-5 would foreclose other operations at about 13 percent of the runways. C-17s would close the airfield to other operations at about 2 percent of the runways.

F-20 FIGHTER AIRCRAFT

QUESTION: General Gabriel, I read that the F-20 is doing well in its test program. I understand that the Air Force is monitoring the program as Executive Agent for DoD. Would you care to comment on the development of this aircraft? Where do you see this aircraft being used?

ANSWER: The F-20 Tigershark has been developed by the Northrop Corporation within the bounds of United States policy on the sale of intermediate export fighter aircraft to friendly foreign countries seeking to modernize their fighter forces over the coming decade. The USAF has closely monitored the development program, has participated extensively in the test program and fully expects the aircraft will meet or exceed performance and supportability standards. Contractor-developed cost estimates provided for potential foreign customers have also been examined by the USAF and are considered reasonable. Moreover, the USAF is fully prepared, under foreign military sales procedures, to assist in the acquisition and support of the F-20 fighter.

AIR FORCE AGGRESSOR FORCE

QUESTION: General Gabriel, what about the Air Force aggressor force where you are now using F-5s; when will it need to be modernized and wouldn't this F-20 make a good aggressor aircraft?

You haven't requested funding for the new aircraft to modernize the aggressor force in this budget or in the POM. If additional resources were made available wouldn't it make sense to begin this aggressor modernization?

ANSWER: The F-5 is a good simulator of the MIG-21, but cannot match the performance of the newer Soviet fighters. As the Soviet threat has increased, we have considered follow-on aircraft as well as F-5 avionics upgrade to more closely simulate the newer Soviet threats.

The F-20 could be a better threat simulator than the F-5, but the high priority of our total Air Force needs for strategic modernization, readiness and sustainability, increased airlift capability and tactical force modernization require us to devote our limited resources to these areas.

Obviously, if we were not constrained by available resources, there are a number of important areas we would invest in, including a new aggressor aircraft.

B-1B BOMBER

QUESTION: Mr. Secretary, I note in your statement that the B-1 program is ahead of schedule and within cost, but why are you so confident that you can achieve the Presidentially certified program costs?

ANSWER: Secretary Weinberger tasked the Air Force to conduct the financial analysis for the B-1B Cost Recertification that he made on 31 January 1984. Three separate, independent agencies within the Air Force conducted financial analyses, which were provided to the Office of the Secretary of Defense Cost Analysis Improvement Group for their review. An abbreviated explanation of the work done by these Air Force Agencies follows:

a. The B-1B Program Office performed an annual estimate of the B-1B program tracking both the program cost and content to the 1981 baseline. This estimate supports Air Force Systems Command's current estimate of the program.

b. Senior Aeronautical Systems Division Comptroller personnel conducted an Independent Sufficiency Review of the B-1B Program Office annual estimate. They reviewed the estimate for reasonableness (acceptable estimating methodology), consistency (cost compatible with scope of work), and completeness (all work as defined by the 1981 baseline cost estimate) and reaffirmed the validity of the $20.5 billion estimate.

c. The Air Force Systems Command Comptroller led a detailed analysis of the contractor's cost and schedule performance to date. Estimates-to-complete for contracted effort, contract change analysis, application of management reserve, and manloading were studied and used to validate the B-1B Program Office annual estimate.

These financial analyses confirm the $20.5B (FY 81 $) cost estimate is reasonable for accomplishing the baseline program.

IMPACT OF WARRANTY PROVISION ON B-1B BOMBERS

QUESTION: What impact if any is the warranty provision of our 1984 bill having on this particular program?

ANSWER: Implementation of the new warranty provision will have an adverse cost impact on the B-1B program. The nature of Section 794 warranty coverage required by the new law is beyond the scope of Defense Acquisition Regulation warranty coverage previously incorporated into the four B-1B prime contracts. A literal interpretation of Section 794 would require each contractor to be responsible for all performance requirements with unlimited potential liability. In addition, a similar assumption of liability would be forced upon lower tier subcontractors. Providing this coverage will require many previously priced subcontracts to be reopened and repriced. All of these added costs will be beyond the scope of the $20.5B (FY 81 $) B-1B baseline. This impact assessment may be revised when we receive final OSD guidance on Section 794 implementation. We will continue to review the application of the new law with the contractors during the negotiations of our multiyear contracts. As the full impact of Section 794 becomes known, we will have a more detailed understanding of its effect on the B-1B.

STATUS OF FLIGHT TEST PROGRAM

QUESTION: Is the Air Force keeping to its current B-1B flight test program? Or are you considering Rockwell's internal proposal to move the first flight of the B-1B up to October?

Would accelerating the first B-1B flight test have any negative impact on the overall flight test effort?

ANSWER: Contractually the flight test of B-1B number 1 is not scheduled to begin until March 1985. However, all of the associate contractors have been working towards a December 1984 first flight with the rollout in October. This internal schedule was a conservative planning factor which the contractors believed to be prudent to ensure satisfying their contractual commitments.

We now believe a rollout during the first part of September is a definite possibility due to the success of the Air Force/contractor team thus far in producing the first B-1B. This means we may be able to fly as early as October, but it would be too speculative to forecast that event at this time.

Accelerating the first B-1B flight test will not have a negative impact on our program. The Developmental Test and Evaluation/Initial Operational Test and Evaluation program for the B-1B is a 57-month effort which began in January 1982 with the first full scale development contract award to Rockwell International. B-1A number 2, B-1A number 4, and B-1B number 1 are the flight test vehicles. B-1A number 2 has been flying now for one year, testing aircraft handling characteristics, vibrations/acoustics, and weapons carriage/separation. B-1A number 4, the avionics testbed, will begin flying in July of this year.

MILITARY LAUNCH REQUIREMENTS

QUESTION: Mr. Secretary, why has the Department of Defense decided that the Space Shuttle alone cannot meet our military launch requirements, and that the Air Force must now buy two new expendable launch vehicles for each of the next five years?

Wasn't the Shuttle supposed to decrease our reliance on ELVs? Is DoD concerned that the Shuttle may not assure access to space for our military satellites?

What does this say about our reliance on space systems for critical missions? Is it increasing?

ANSWER: The Secretary of Defense approved a new defense space launch strategy on February 7, 1984. That document points out that "the DoD has a validated requirement for an assured launch capability under peace, crisis and conflict conditions." Under the new strategy, the Shuttle remains DoD's primary launch vehicle and its vitality is essential to DoD's future launch needs. The new strategy was issued in response to concerns expressed by all national security users of space (e.g., JCS, Space Command, DCI, Air Force) and took account of many studies conducted on the subject (e.g., by RAND, IDA, GAO, OSTP AND AFSC). Invariably the results of objective studies have confirmed the view that prudent military planning dictates that DoD not be totally dependent upon the Shuttle and have an Expendable Launch Vehicle) (ELV) capability to complement it. The complementary system is required: to hedge against shuttle problems (e.g., technical, production, or vulnerability) which could result in catastrophic losses or fleet outages; to reduce launch-on-demand pressures on NASA: to provide launch-on-demand flexibility to the DoD for key national security payloads; to maintain the US launch system industrial base; and to maintain US competition with foreign capabilities.

The shuttle has decreased our reliance on ELVs and will increasingly do so into the 1990s. The DoD plan calls for only 2 launches per year on ELVs during the period 1988 through 1992. Some 90 percent of NASA's shuttle mission model remains unaffected by DoD's ELV plan. We consider this prudent, affordable insurance against unforeseen, but potentially crippling events which could deny us all access to space.

What this says about space systems for some critical missions is yes, our reliance is increasing. Some missions (e.g., strategic warning, surveillance and overseas communications) depend heavily upon space platforms and we must be able to launch such systems with confidence and flexibility.

Questions Submitted by Senator Weicker

HH-60D/E NIGHT HAWK HELICOPTER PROGRAM

QUESTION: The Air Force is planning to buy 155 HH-60D/E Night Hawk helicopters at a total cost of $3.0 billion. These aircraft would be a derivative of the Army Black Hawk UH-60A helicopter. The HH-60 Night Hawk aircraft would be designed for two missions: 1) combat rescue; and 2) special operations. The high cost of these helicopters -- about $20.0 million each — is driven by the need to conduct low level flight under night/adverse weather conditions.

With the advent of night vision goggles that cost $20,000 a pair, night low level flight operations with helicopters are now possible. However, such operations under adverse weather conditions are another matter. The cost of this capability is much higher, driving the unit cost of the HH-60 from about $10M to $20M, and in the end may not be attainable. The Air Force has 9 HH-53H Pave Low helicopters that are equipped to fly at low altitude under night/adverse weather conditions, but they never train under those conditions. Why?

ANSWER: Low level flight during instrument meteorological conditions (IMC) adds another element of risk to an already demanding mission. At very low altitudes the reduced time to react to equipment malfunctions/emergencies makes routine and repetitive training in this environment unacceptable. However, AF pilots train to the proficiency level necessary to accept this risk during wartime.

For example, during recent exercises, Air Force HH-53Hs flew through adverse weather to their destination while dissimilarly equipped Army UH-60s were forced to turn back. During Flintlock 83, while deployed to northern Italy, HH-53Hs repeatedly encountered IMC en route to their target areas, yet completed their missions. In January 1980, at Kirtland AFB, NM, an HH-53H accomplished a life-saving rescue at night in weather of 100 ft ceilings with visibility of 1/8 NM in snow showers and fog.

UNREFUELED RADIUS

QUESTION: Air Force requirements dictate that aircraft used to support special operations have an unrefueled combat radius of 700 nautical miles. Since HH-60D/E aircraft will have an unrefueled radius of 250 nautical miles, these aircraft could not meet 80-90% of special operations mission needs. Is that true?

ANSWER: The HH-60D, with air refueling will have a combat radius of approximately 750 NM covering roughly 65% of special operations distance requirements. A mix of HH-60Ds, MC-130s, and JVX will provide 100% capability.

HELICOPTER MIX

QUESTION: A 1983 Defense Department study concluded that a mix of HH-53E and HH-60 helicopters would offer a less costly and a more effective alternative for meeting combat rescue and special operations requirements than the current plan. Would you care to comment on the results of that analysis?

ANSWER: The study cited was actually an OSD alternative that was considered during the FY 85 Service Program Objective Memorandum submission. The alternative did not provide a less costly, more effective solution for meeting both combat rescue and special operations requirements, but rather, substantially reduced one mission area procurement in favor of the other. The mixed aircraft procurement to support the alternative was structured to remain within the total funds allocated in the POM for both programs. In the reclama actions by the Air Force, OSD decided not to accept the alternative. The Air Force routinely considers all alternatives to meet force structure requirements and establishes the most cost effective solution over the long term considering actions necessary to meet short term requirements. There are no plans at this time to procure the HH-53E since current USAF H-53 assets will satisfy the short term special operations needs while JVX provides the long term solution.

FIGHTER ENGINE COMPETITION

QUESTION: The first phase of the fighter engine competition has been completed, and as I understand it, General Electric submitted an excellent bid in every respect, and as a result, has won a very substantial portion of the fighter engine business. Hopefully, all that is now behind us. What I am now most concerned about is the need to develop higher thrust versions of both the General Electric and Pratt & Whitney engines.

The Defense Systems Acquisition Review Council (DSARC) met in December 1983 to review the entire fighter engine issue. Its recommendations were as follows: 1) proceed with the competition; 2) initiate a separate program to develop a 30,000-32,000 lbs thrust engine for installation in F-15/16 aircraft by 1990; and 3) direct the Air Force to program $100 million in FY 1985 to support such a program. Is the Air Force proceeding with those plans? If so, what is being done?

ANSWER: Yes. The Air Force is preparing an adjustment to the FY 85 President's Budget that would reallocate funds to preserve the option for higher thrust advanced derivatives of F100 and F110 engines.

DUAL ROLE FIGHTER DECISION

QUESTION: How will the recent decision on the Dual Role Fighter (F-15E) affect the production of Pratt & Whitney engines?

ANSWER: The Dual Role Fighter (DRF) decision will not have an effect on production of Pratt & Whitney engines. The DRF decision did not add to or detract from fighter engine requirements because it did not change our programmed buy of airframes.

QUESTIONS SUBMITTED BY SENATOR GARN

MINUTEMAN STAGE III MOTOR & CONTRACT

QUESTION: The Stage III motor currently in the Minuteman III operational force has a very high demonstrated reliability with high confidence based upon 14 years of operational experience. What is being done to assure that the remanufacture of these motors does not result in the degradation of this reliability prior to committing the remanufacture of motors from the operational force? Is the program on schedule?

The award of the Minuteman III Stage III contract resulted in assigning this critical program to a contractor with no Minuteman manufacturing experience. What is being done to assure that the close configuration and schedule control developed and demonstrated during Minuteman production is followed by the new supplier? How will the Air Force exert the necessary control of control changes to prevent a natural attempt by the contractor to recover costs not reflected in the winning bid?

ANSWER: Yes, the program is on schedule and we expect to meet the major program milestones. However, there is a safety margin within the schedule to accommodate some program slippage without impacting the operational fleet. Chemical Systems Division (CSD) is required to build nine qualification motors for static testing and two for flight testing. The performance of these motors will be compared with specification requirements. Satisfactory performance of these motors must be demonstrated before CSD will be qualified to produce operational motors.

After CSD begins production of operational motors, randomly selected motors will be tested to asssure continuing satisfactory performance. Twenty-eight motors will be manufactured and set aside for future static firings or dissections. In this way, the aging characteristics of the operational motors can be assessed to ensure continued reliability.

We determined that due to the time lapse since Minuteman III Stage III was built, there were no qualified motor manufacturers. The selection process included the requirement to build a specified number of qualification motors. The number of qualification motors, which is included in the final bid, varied based on the experience of the prospective bidders. The winning bidder, Chemical Systems Division (CSD) of United

Technologies, was required to build more qualification motors than the other two bidders since they had no Minuteman experience. CSD demonstrated experience in motors for other systems. Further, they demonstrated the capability to construct a motor case that exceeded Minuteman specifications.

We imposed a requirement on contractors competing for the Minuteman III Stage III Motor Remanufacture Program that all components and materials used in the program would be procured from the last qualified supplier, if that supplier is still in existence. CSD is complying with that requirement. Additionally, CSD will use, to the fullest extent possible, the same manufacturing processes as the current motor. The Air Force retains approval authority for all contract changes.

PRICE OF FOLLOW-ON MOTOR REMANUFACTURE

QUESTION: Since the current procurement included only about one-quarter of the Minutemann III Stage III motors planned for remanufacture, what initiatives will be taken by the Air Force to assure a reasonable price is obtained in follow-on motor remanufacture?

ANSWER: The current Minuteman III Stage III contract will require delivery of 203 remanufactured motors. The follow-on contract for remanufacture of additional motors is planned for award in FY 88. The submission of the contractor's proposal, fact-finding, and negotiation of this follow-on effort will take place in mid-1987. At that point, the Chemical Systems Division (CSD) will have delivered over 107 remanufactured motors.

The combination of closely monitoring and analyzing contractor actual cost experience, exercising a firm fixed price contract with maximum financial incentives, and extensive follow-up and fact finding will provide the Air Force with the most current and complete cost data available, and ensure reasonable prices for the follow-on effort.

QUESTIONS SUBMITTED BY SENATOR MCCLURE

B-1B COST

QUESTION: I have been reading in the newspapers that the B-1B is below cost. Is this so? By how much?

ANSWER: On 31 January 1984, Secretary Weinberger recertified to Congress that the B-1B program will remain within the President's original $20.5B (FY 1981 $) budget estimate. The analyses behind this recertification found the original budget estimate reasonable and sufficient to accomplish the established baseline program. It is premature to report that the program is below cost by a specific amount since we are still negotiating multiyear procurement contracts and are just beginning to track the data from the second of five production lots.

B-1B PRODUCTION SCHEDULE

QUESTION: What about the production schedule of the B-1? Are we on time, ahead of time, or behind? When will the first of the B-1B aircraft fly?

ANSWER: The B-1B program is currently ahead of schedule. The four associate contractors have been working to internal schedules which are from three to six months ahead of the contract they have with the Air Force. The first B-1B will roll out in early September 1984 and will likely fly shortly thereafter. This is less than three years after the initial production contracts were awarded and over five months ahead of the contractual schedule. While we are encouraged by the progress made to date, it is too early to state that the total program will remain ahead of schedule.

B-1B COSTS VS PRODUCTION RATES

QUESTION: Can you describe how the cost of the B-1 will decrease as production methods become more efficient? Do we have any evidence at this early stage in the program that per-unit airplane costs will actually drop?

ANSWER: Unit costs will decrease as production methods reach the desired efficiency of four aircraft per month in late 1986. The table below, depicting the buy schedule and the approximate per unit recurring flyaway costs, shows the aircraft costing less and less. The per unit reductions are the result of learning curve efficiencies, multiyear procurement savings, and decreasing engineering change orders over the entire 100 aircraft program.

	FY 84	FY 85	FY 86
Buy schedule	10	34	48
Per unit recurring flyaway cost (FY 1981 $ in millions)	172	122	93

B-1B PROGRAM COST

QUESTION: During the FY 84 authorization debate, a colleague argued that the $20.5B estimate (in 1981 dollars) for the 100 B-1B program was too low. This argument was based on his analysis that funding for the first 52 B-1Bs is $16.24B in '81 dollars, leaving a requirement to build the remaining 48 airplanes for only $4.26B. This arithmetic is compelling. How can you build 48 airplanes for $4B when 52 of them cost over $16B?

ANSWER: Two factors caused the B-1B funding profile to be front-loaded: the concurrency of the B-1B RDT&E and procurement programs, and multiyear procurement contracts. The front-loading included the payment of nonrecurring costs (i.e. tooling, factory test equipment, production planning, and factory setup) and economic order quantity buying and fabrication. The bulk of the research and development costs were also paid during the first few years of the program.

Additionally, the procurement dollars to be spent in FY 86 do not represent the full procurement cost of the last 48 aircraft. Through advance procurement, we are paying for these aircraft in four installments: $68M in FY 83, $397M in FY 84, $1.1B in FY 85, and $3.5B in FY 86 (all amounts in FY 81 $).

Cost trend information is favorable, and cost avoidance savings achieved to date indicate we will stay within our budget estimate.

CONVENTIONAL ROLE OF THE B-1B

QUESTION: I also hear a lot about the conventional capabilities of the B-1. Why would we risk such an expensive airplane for conventional missions? As one defense analyst said, "Why do we need the B-1 to bomb Bulgarians?"

ANSWER: The B-1B's primary role will be as a penetrating strategic nuclear bomber. However, the B-1B could also be used as a cruise missile carrier and a conventional bomber, as directed by the 1981 DoD Authorization Act.

Many of the B-1B's inherent penetration characteristics -- speed, range, reduced radar cross-section, advanced electronic countermeasures, and large payload capacity -- would be equally useful in a conventional conflict. The employment of the B-1B in such a conventional mission would be influenced by many factors, including the threat, urgency of striking the target, and impact upon our Single Integrated Operational Plan.

BOMBERS VS CRUISE MISSILES

QUESTION: Why do we need manned bombers at all when we have cruise missiles? Why can't we depend on cruise missiles alone to hold up the air-breathing leg of the Triad?

ANSWER: The most effective air-breathing force is a mixed force of penetrating bombers (employing gravity bombs and short range standoff weapons) and cruise missile carriers. A mixed force of penetrating bombers and cruise missiles places maximum stress on Soviet defenses and will be more effective than a homogeneous force of either one. High speed penetrators, like the B-1B, complicate the Soviet defense problems by preventing them from concentrating on defeating cruise missile carriers in a strictly standoff profile. The B-1B, penetrating with a full complement of sophisticated electronic countermeasures, places the entire Soviet target structure at risk.

The cruise missile is a superb preplanned, hard target killer, but it is only useful against known, precisely located targets. Manned bombers, on the other hand, can be used against the full spectrum of targets, even those which emerge after a conflict has begun. The bomber is the most flexible element of the Triad. It can be launched and controlled before a decision to use nuclear weapons. Once launched, it can be redirected, assess the attack, and be reconstituted for follow-on missions. Bombers can also be launched to ensure their survivability or to signal national resolve during time of crisis. Bombers carry a large number of weapons and can cover widely separated targets. They can engage alternate targets by using the crew and aircraft sensors to determine target location. As reuseable weapon systems, long-range combat aircraft can deliver large nuclear or conventional payloads accurately throughout the spectrum of conflict. In maritime roles, bombers with short response time can also accomplish long range sea surveillance, ship attack, and minelaying.

B-1B PRODUCTION RATE

QUESTION: Some people advocate reducing the B-1 production rate to 3 per month or even 2 per month in order to lower the FY 85 defense budget. Please tell us in detail the effects of such a reduction in time and dollars.

ANSWER: The key issue if the B-1B were stretched out would not be just dollars, but the resultant danger to our national security. Achieving full B-1B operational capability as soon as possible is essential. Stretchout of the program would not allow us to reduce rapidly the substantial risks of relying on the aging B-52. We would also run the risk of conveying the perception of a lack of national resolve to our allies and potential adversaries.

The Department of Defense is opposed to stretching out B-1B production, an action that would break the $20.5B baseline program as certified to Congress. The B-1B program, as it is being managed, should be a benchmark for future major systems acquisitions. By adhering to a tightly controlled configuration, schedule, and budget, we have been able to stay ahead of schedule and within budget.

The current 4-aircraft-per-month program provides 100 aircraft by June 1988 versus December 1988 for a 3-aircraft-per-month rate or March 1990 for a 2-per-month rate.

To stretch the production rate would force the Air Force to reopen contract negotiations with each of the associate contractors. This could add as much as $4-6B to the total program cost due to the uncertain nature of these contract renegotiations and the closely woven efficiencies of our multiyear procurement program.

DOLLAR SAVINGS FROM B-1B CANCELLATION

QUESTION: How much savings would result if the B-1B program were cancelled shortly after 20 January 1985?

ANSWER: By 20 January 1985, approximately 80 percent of the B-1B program will funded, including the purchase of the first 52 aircraft and advance procurement for the last 48 aircraft. Most of the funding for the program was front-loaded to gain the most from multiyear procurement methods, cover the initial research and development, and pay for factory tooling. Contract penalties for early cancellation, resultant advance procurement losses, and the continuation of essential RDT&E would reduce the final cancellation savings to a value less than the 20 percent remaining in the program. We estimate the net cost avoidance to be 10-15 percent of the total program budget. A 20 January 1985 cancellation would nearly double the average price of each aircraft since we would get only half as many aircraft and would still pay an estimated 85-90 percent of total program cost.

QUESTIONS SUBMITTED BY SENATOR KASTEN

DEFENSIVE SYSTEM EFFECTIVENESS

QUESTION: What is your attitude concerning the feasibility of a workable strategic defense? Do you think we should aim at an impervious system, or do you believe that a system that is not 100 percent effective can still afford us a deterrent by changing the calculations of a potential attacker? What about the budgetary effects? How much lower would they be for a non-impervious as opposed to an impervious system.

ANSWER: The Flectcher Panel, which consisted of some 50 of American's most prominent scientists and engineers, looked very closely at the feasibility of an effective defense against ballistic missiles and concluded that, based on our knowledge of the appropriate technologies, there is significant promise that an effective defense against ballistic missiles is possible. While it is very unlikely (albeit not impossible) that a leak-proof or perfect defensive system could ever be built, such a defense is not necessary. To significantly enhance our ability to deter war, it is necessary that the defense be highly effective—not perfect.

Since a perfect defense against a large-scale attack is probably not technically feasible, regardless of the level of expenditure devoted to it, budgetary comparisons of such a system with an effective, (but imperfect) system are not possible.

QUESTION: The Air Force is to be commended on its integration of Reserve Components into its overall readiness posture. Military Airlift Command (MAC) in particular has done a tremendous job in utilizing Reserves. What more can you do in this area? MAC certainly is at its limit in the utilization of Reserves but how about your other commands?

ANSWER: In support of the Total Force policy, Air Force doctrine stipulates that Air Reserve Forces (ARF) will be used to increase the capability, flexibility and effectiveness of the total Air Force. The Air Force has made a concerted effort to modernize and upgrade the ARF. The current mix of Active and Reserve Forces is a delicate balance of national priorities, fiscal realities, and most importantly, the capability to counter the threat. Commands other than MAC also benefit from ARF participation. Our tactical air forces are augmented by ARF tactical and reconnaissance units. Our strategic air force is augmented by Air Reserve Forces flying KC-135s and KC-10s meeting global air refueling requirements. ARF contributions by mission area to Total Force requirements are as follows:

Air Refueling	21%
Air Weather Reconnaissance	28%
Air Rescue & Recovery	37%
Special Operations	28%
Strategic Interceptor	69%
Tactical Air Support	33%
Intratheater Airlift	58%
Tactical Electronic Warfare	19%
Tactical Fighters	32%
Tactical Reconnaissance	53%
Aeromedical Airlift Aircrews	30%
Intertheater Airlift Aircrews	50%
Tanker/Cargo (KC-10) Aircrews	50%

In February 1984, the Air Force announced the following increases or equipment upgrades in the ARF: activation of an additional KC-10 associate squadron, the addition of 34 C-5 aircraft, 18 RF-4Cs, 24 F-15s, 24 F-16s and 18 C-130Hs and the activation of five Air Base Defense Flights, one civil engineering squadron (RED HORSE), one USAF contingency hospital, ten PRIME BEEF (civil engineer) teams and four PRIME RIB (food preparation specialists) teams.

We will continue to program both combat and combat support units to the Air Reserve Forces that will contribute to the Total Force posture in the most effective and efficient manner to meet our national objectives.

SPARE PARTS AND MANAGEMENT OF THE DEPARTMENT

QUESTION: One of the main reasons that there is growing public opposition to increases in defense spending is the perception that there is a great deal of "fraud, waste and mismanagement" in the Pentagon. Nothing reinforces this perception more than the scandal concerning spare parts. Of course, we in the Congress and certainly the press fail to credit you and the other service Secretaries for the improvements you have made. It was, after all, the Department of Defense itself and not the press that uncovered and publicized the spare parts scandal. Can you bring us up to date on this matter? What steps have been taken to discipline procurement officials who have been found to have behaved improperly? Have any contractors been charged with fraud? What steps has your Department taken to improve management techniques so that situations such as have occurred with spare parts do not happen again?

ANSWER: Our steps to control Government procurement officials who perform improperly are widely known, well-established, and effective. Because an appointed contracting officer has the authority to enter into, administer or terminate contracts, the Federal Acquisition Regulation and Air Force Supplement include provisions to terminate an appointment for reasons such as unsatisfactory performance. The Air Force goes further by reviewing individual appointments at least every two years or more frequently during staff reviews.

As for contractors, we have measures to restrict their participation in defense business as well as legal remedies for serious violations, such as fraud. The number of companies and individuals debarred or suspended by the Air Force has increased from 22 in FY 82 to 51 in FY 83.

To improve the spares purchasing process, the Air Force has initiated various corrective actions. One of the most significant and widely publicized initiatives was the Air Force Management Analysis Group (AFMAG) effort. The AFMAG, a special Air Force study group established to examine our spares acquisition process, made 178 recommendations for improvement. A General Officer Steering Group has been established to monitor implementation of these recommendations.

Additionally, we have already instituted such efforts as the Value Analysis Program. Under this program, the total pricing process from initial to replenishment acquisition is examined to improve the process and to ensure price changes are fair and reasonable. Another program is Zero Overpricing in which the price of an object is shown on the receipt when it is drawn for use. This helps our people to know the costs of our parts and helps cut down on abuse while encouraging price challenges. To help increase competition, we have also established Competition Advocates in every Air Logistics Center. These, and other initiatives, are already showing results and should go a long way toward remedying the recently disclosed spares pricing problems.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

EXPENDABLE LAUNCH VEHICLES

QUESTION: Recent published reports indicate that the Air Force is considering procuring additional expendable launch vehicles. These vehicles would be an improved version of the Titan 34-D. These reports also note that refurbished Titan II ICBM's may be employed as expendable launch vehicles as they are removed from Strategic Air Command service. With the Space Transportation System now working well, and with Department of Defense payloads provided first priority for STS launches, why is refurbishment of Titan II's and renewed purchase of expendable launch vehicles now under consideration?

ANSWER: The question has mixed up two separate actions now under way within the Department of Defense (DoD) and the Air Force; the actions are at widely differing stages at this time. The first action has to do with DoD's new space launch strategy and the second with an internal Air Force study on the use of Titan II's after their deactivation.

With regard to the first action, the Secretary of Defense approved a new Defense Space Launch Strategy on February 7, 1984. That document points out that "the DoD has a validated requirement for an assured launch capability under peace, crisis and conflict conditions." Assured launch capability is a function of satisfying two specific requirements — the need for complementary launch systems to hedge against unforeseen technical and operational problems and the need for a launch system suited for operations in crisis and conflict situations. Under the strategy, the Shuttle remains DoD's primary launch vehicle. The new strategy was issued in response to concerns expressed by all national security users of space (e.g., JCS, Space Command, Air Force) and took account of many studies conducted on the subject (e.g., by Rand, IDA, GAO, OSTP, AFSC, SIG (Space) and the DoD Space Net Assessment). Invariably, user comments and the results of objective studies have confirmed the view that prudent military planning dictates that DoD not be totally dependent on the Shuttle and have an Expendable Launch Vehicles (ELV) capability to complement it. The complementary system is required to hedge against Shuttle problems (e.g., technical, production, or vulnerability) which could result in catastrophic losses or fleet outages; to reduce launch-on-demand pressures on NASA; to provide launch-on-demand flexibility to the DoD for key national security payloads; to maintain the US launch system industrial base; and to maintain US competition with foreign capabilities. Contrary to the assumption stated in the question, the new ELV would not necessarily be "an improved version of the Titan 34-D." The approved DoD plan calls for competitive proposals from any qualified contractor to upgrade or modify existing launch components to produce an ELV capable of placing a 10,000 pound payload into geosynchronous orbit in the 1988 time frame. There are several contractors with differing solutions to this requirement.

The action involving Titan II has no relationship with DoD's plan to procure commercial, upgraded capability ELVs. Since Titan IIs are being deactivated over the next few years, there have been many questions from both the Congress and the Executive Branch on the possible future uses of these existing assets, which comprise an inventory worth about $100M. As is done with all such deactivations, the Air Force is studying how best the DoD and the nation could productively use these valuable assets. If the study demonstrates that enhanced operational flexibility is provided and/or that a savings to the taxpayer is possible through use of the Titan IIs, the FY 86 Air Force Program submission to OSD will seek approval to include this initiative in the FY 86 budget to Congress.

ELVs

QUESTION: Construction for the Air Force's Space Transportation System launch and recovery facility at Vandenberg Air Force Base is well under way. Both the CSOC and SPADOC efforts are also well under way and the Air Force has supported the establishment of a joint space command. The Air Force also has the lead role in the President's Strategic Defense Initiative. All of these developments appear to be much more suited to the purchase of additional STS vehicles instead of additional expendable boosters. Please explain the Air Force's thinking comparing the advantages and disadvantages of an Air Force-owned fleet of Shuttle orbiters with a renewed development and procurement effort involving expendable launch vehicles, in the context of present and most likely future Air Force space missions.

ANSWER: The examples of progress cited on various Air Force space activities are indicative of the flexibility and robustness which we are trying to provide to our nation's space posture. The Vandenberg shuttle spaceport is vital for the accomplishment of military polar and retrieval missions not possible from Kennedy Space Center, while CSOC will provide necessary complement to our sole Satellite Tracking Center located near an earthquake-prone area in California. We are trying to provide the same degree of flexibility and robustness to our space launch posture as well. Existing Defense space launch planning specifies that DoD will rely on four unique, manned orbiters for sole access to space for all national security space systems. DoD studies and other independent evaluations have concluded that this does not represent an assured, flexible and responsive access to space. While the DoD is fully committed to the STS, total reliance upon the STS for sole access to space in view of the technical and operational uncertainties, represents an unacceptable national security risk. A complementary system is necessary to provide high confidence of access to space particularly since the Shuttle will be the only launch vehicle for all US space users. In addition, the limited number of unique, manned Shuttle vehicles renders them ill-suited and inappropriate for use in a high risk environment. The purchase of additional orbiters does not relieve the basic DoD concern because a grounding of the Shuttle system or perceived vulnerability in a crisis will affect all orbiters regardless of the number procured. Moreover, it is not an issue of who owns or operates the orbiters. We continue to believe that no benefits to our national defense posture would result from Air Force ownership of the fleet, and quite a few problems would obviously arise from a military service trying to fulfill mission model flight obligations, two-thirds of which are to commercial or foreign users.

DoD's preferred solution is the procurement of a modest number of commercially available ELVs. This approach is consistent with the President's policy on the encouragement of commerical ELVs and requires no funding for the development costs. This approach will require enabling language in the FY 85 Authorization and Appropriations Bills. This plan calls for only 2 ELV launches per year between 1988 and 1992. Some 90 percent of NASA's Shuttle mission model would remain unaffected. We consider this prudent, affordable insurance against unforeseen but potentially crippling events which could deny us all access to space.

The $8M requested in FY 85 is for payload integration studies for the selected ELV. An additional $2M is being sought for conceptual studies of a heavy-lift launch vehicle, possibly shuttle derived, for the mid-1990s time frame. This latter capability will doubtlessly find application with Strategic Defense Initiative (SDI) requirements. It should be noted that SDI requirements are currently being established by OSD, not the Air Force.

AIR FORCE ROLE IN THE NEW MANNED SPACE STATION

QUESTION: What role does the Air Force expect to play in the new manned space station initiative?

ANSWER: The DoD/USAF position on the potential use of a permanently manned space station has been thoroughly investigated. There are currently no identifiable national security requirements that can be uniquely met or significantly enhanced by a permanently manned space station.

DoD/USAF is continuing to closely follow NASA space station activities. Capabilities involving permanent manned presence in space will be considered as future military space requirements emerge.

ASSESSMENT OF SOVIET UNION'S MANNED SPACE PROGRAM

QUESTION: What is the Air Force's current assessment of the Soviet Union's manned space program?

ANSWER: The size, scope, and integrated nature of the Soviet manned space program are impressive. They have achieved twice as many manned-spaced days as the United States and have acquired new knowledge, experience, and a greater appreciation for the value and capability of man in space. Future military space developments will place even heavier emphasis on the use of manned systems. In the immediate future, their modular space stations will be used to conduct subsystem development tests, feasibility testing of new systems, and to develop concepts of operation. Eventually, the station will be a permanent space operations center with men performing functions such as [deleted.]

ASSESSMENT OF SOVIET UNION'S ANTI-SATELLITE CAPABILITY

QUESTION: What is the Air Force's current assessment of the Soviet Union's anti-satellite capability, both now and in the future?

ANSWER: Current Soviet ASAT capabilities are limited to an operational, ground-based, non-nuclear anti-satellite system; [deleted.] Other systems which have an inherent ASAT capability but a low likelihood of deployment are [deleted.] Future ASAT capabilities include space-based laser and [deleted] [deleted.] We believe the space-based laser will be tested by the early 1990s; however, the technical requirements for [deleted.]

SOVIET UNION'S OPERATIONAL CAPABILITY

QUESTION: When does the Air Force expect the Soviet Union to attain the operational capability to attack US spacecraft in geo-synchronous orbit?

ANSWER We do not expect the Soviets to have the capability to directly attack geo-synchronous satellites until the [deleted.] However the Soviets can possibly [deleted] these satellites today. Although we lack direct evidence of dedicated facilities, the Soviets posses all the resources to attempt [deleted.]

If the Soviets require a direct attack method before the mid 1990s, they may [deleted] against high-altitude spacecraft. However, we have no evidence of a Soviet program to develop such capabilities, and believe the likelihood of such developments is low.

SOVIET UNION'S CAPABILITY IN SPACE

Question: Looking at the totality of Soviet space efforts, do you see the Soviet Union progressing toward the attainment of an integrated war fighting capability in space?

Answer: To date, Soviet activities in space, and their limited writings on the subject, indicate they are using space assets primarily to increase the combat capability of their terrestrial forces. [Deleted.] For example, they are developing space based laser weapons, a heavy launch vehicle, a space plane and a large space station.

STRATEGIC RELATIONSHIP WITH THE SOVIET UNION

QUESTION: In connection with the President's Strategic Defense Initiative, the charge has been made that deployment of a space-based anti-missile defense would be severely destabilizing to our strategic relationship with the Soviet Union if only the United States were to deploy, or begin to deploy such a system. Does the Air Force see evidence that the Soviet Union is also attempting to develop such a system for possible future deployment?

ANSWER: Yes, the Soviets are pursuing all necessary technologies required for a space-based laser ballistic missile defense system. However, we do not expect them to deploy an operational system until after the year 2000.

STRATEGIC DEFENSE INITIATIVE

QUESTION: Given the time frame set for our Strategic Defense Initiative, does the Air Force believe US and Soviet systems will be deployed over the same time period, if both nations should choose to proceed with deployment?
ANSWER: Any answer to this question must, of necessity, be speculative because we simply do not know that much about the Soviet program. Our estimates, however, are that a layered ABM system is clearly a 20 to 25 year proposition. How fast the Soviets can proceed is a function of how successful they are with the work now under way over the next few years and their ability to transition the technology into a deployed system.

SOVIET HARDENING OF ICBM'S AND SLBM'S

QUESTION: Critics of the President's Strategic Defense Initiative (SDI) have claimed that the Soviet Union could easily harden its ICBM's and SLBM's to a level of hardness sufficient to protect them from destruction by other than short wave length high energy laser weapons technology. Certain assumptions regarding possible Soviet hardening of ICBM's and SLBM's were included in the Fletcher Commission's reasoning on the course we should follow with the SDI. What are the Air Force's views on the assumptions and on the Soviet Union's practical ability to solve the engineering, production, and retrofitting problems they would face if they attempted to harden their present generation of ICBM's and SLBM's?

ANSWER: The Fletcher Commission's assumptions on the Soviet hardening of ICBM's and SLBM's are reasonable and valid. The Soviets have the ability to harden their present generation of ICBM's and SLBM's against [deleted.] There appears to be no basic engineering or cost constraints to prevent the Soviets from making their existing boosters [deleted.] The large throwweights of existing Soviet ICBM's would accommodate the added structural weight of hardening materials, albeit with a commensurate reduction in re-entry vehicle payload. This view is consistent with that of the Fletcher Commission.

POROUS ANTI-BALLISTIC MISSILE DEFENSE

QUESTION: Since even a relatively porous anti-ballistic missile defense should decrease Soviet strategic planners' confidence in their ability to plan and execute an effective counter force first strike against the United States, do you believe the deployment of even a porous system would increase our ability to deter such a Soviet attack?
ANSWER: While an impregnable defense against ballistic missiles may not be possible, imperfect, but effective defenses can create great uncertainty as to the likely success of an attack and deny attack objectives. In this way, effective, although not perfect, defensive systems can enhance deterrence.

SOVIET GROUND BASED ANTI-BALLISTIC MISSILE DEFENSE

QUESTION: What is the Air Force's view of Soviet ground based anti-ballistic missile defense efforts?

ANSWER: The Soviets continue to work on their ballistic missile defenses around Moscow. They evidently plan to upgrade the performance of their defenses with a new phased-array radar and expand the deployment of anti-ballistic missile launchers to the Treaty limit of 100. The current Moscow defenses could only provide a [deleted.]

The 100 ABM interceptor defense projected for the ongoing Moscow upgrade would quickly be exhausted in a large-scale attack, however, it might be effective in preferentially defending selected targets in the Moscow area, such as [deleted.]

The available evidence does not indicate with any certainty whether the Soviets are making preparations for deployments beyond the limits of the ABM Treaty. Nevertheless, the ongoing construction of large phased-array radars elsewhere in the Soviet Union and their active [deleted] [deleted] show that the Soviets are steadily improving their ability to exercise options for [deleted] of ballistic missile defenses. If the Soviets decide to abrograte the Treaty, we believe they would undertake [deleted.]

PRESENT STATE OF SOVIET ABM DEVELOPMENTS

QUESTION: As the Air Force views the present state of Soviet ABM developments, what options does the Soviet Union have if it chose to deploy an ABM system in violation of the present ABM Treaty, and what impacts would these options have on the Air Force's ability to successfully accomplish its strategic mission?

ANSWER: The Soviet Union could stretch the language of the treaty to its limits through vigorous work on ABM-related systems, could commit minor infractions of the letter and spirit of the treaty, could violate the treaty with bold deployment of a system or systems clearly prohibited,or could formally abrogate the treaty before taking such actions. Actions that would violate the treaty include deploying in excess of 100 interceptors, defending areas outside the Moscow complex, and building additional radars that would be used to support a nationwide defensive system. Any of these actions could further weaken US counterforce capability and thereby our ability to deter war. While penetration aids on US systems could reduce the effect of the problem, they would not redress the strategic imbalance without subsequent deployment of a complementary US defensive system.

PENETRATION OF ABM DEFENSES

QUESTION: Please compare the relative ability of MX, Minuteman III, and Midgetman to penetrate the projected ABM defenses discussed in the previous question, with specific reference to current and future penetration aids and possible requirements for manuvering warheads and terminal guidance.

ANSWER: The current Soviet ABM system, [deleted.]

Upgrades to the [deleted.] The U.S. posture has been to invest in research and development programs that will provide the technology necessary to counter, in a timely manner, any potential Soviet ballistic missile defense initiative. The Advanced Strategic Missile Systems (ASMS) program is currently conducting advanced development on a penetration aid system that includes decoys (active and passive candidates), advanced [deleted] countermeasures,and a deployment system that is applicable to Minuteman III, Peacekeeper, and Small ICBM. This system is being designed to [deleted.]

By the mid to late 1990's, the defensive threat may become more advanced [deleted]

ASMS is already investigating these advanced threats and evaluating candidate concepts, such as defense suppression systems and maneuvering reentry vehicles (MaRV), to determine the best systems to pursue in development. While MaRVs, perhaps with terminal fix guidance systems, would have future application for evading advanced Soviet defenses and increased accuracy, [deleted.]

In summary, our ICBM penetrativity has not been neglected. [Deleted]. Advanced development is on-going to provide timely counters to the projected near-term defense upgrades and candidate systems are being evaluated to defeat the potential long-range threats. The systems now in advanced development, and those that will be evaluated for the far-term threats, are adaptable to all of our ICBMs.

STRATEGIC DEFENSE INITIATIVE

QUESTION: In the most general sense, in terms of effective military capability obtained per dollar expended, does the Air Force believe active strategic defensive systems, whether conventional ABM systems or advanced systems such as those envisioned in the Strategic Defense Initiative, are gaining on offensive strategic systems?

ANSWER: DoD believes that the proper way for the United States to analyze its strategic investments is to consider how strategic defenses and modernized strategic offensive forces would each contribute to our national security, and, in particular, how they would complement each other. Based on the President's direction, the DoD is assessing the ability of defense technologies to support a shift toward a greater role for defenses in our strategic posture. But there is no way to eliminate requirements for offensive forces even if the decision were made to move forward with defense procurements.

QUESTION: In United States Military Posture for FY 1985, the Organization of the Joint Chiefs of Staff compares the currently"...planned and programmed US strategic force with a Soviet force that reflects US analyses of achievable Soviet production and development levels and, in some cases, more technically advanced systems. In this comparison, all static force trends toward Soviet advantage continue beyond the 1980's. The deployment of modernized US systems does not halt the downward slide until the early 1990's. Only when the TRIDENT II SLBM, small ICBM, and the ATB are deployed is there a trend reversal in any measure of capability." (emphasis added.) If this situation should develop, the US will be faced with a choice regarding the allocation of the resources we provide for our strategic forces. Does the Air Force believe that, in this context, it would be better, as a matter of military judgment, to allocate more resources toward the development and deployment of an active strategic defense or toward the development and deployment of additional strategic offensive weapons?

ANSWER: The DoD believes that both the Strategic Offensive Force Modernization program and the Strategic Defense Initiative are essential to the development of the necessary US strategic force posture, and that the funds requested for appropriation in FY 85 are appropriately balanced. It should be noted that the Strategic Modernization program is a program for development and deployment of certain offsensive systems, while the Strategic Defense Initiative is a research and technology program to determine whether system development of such systems should begin.

CHEMICAL DEFENSE PROGRAM

QUESTION: Please describe the Air Force's current chemical defense program.

ANSWER: The Air Force's chemical defense program has steadily improved since 1978, particularly in the area of individual protection. Our aircrews and ground support personnel will be fully equipped with first-generation protective ensembles by FY 85. This will provide us with a capability to survive a chemical attack and fight for [deleted.] However, first-generation items impose a severe thermal burden and restrict visibility and manual dexterity. Consequently, qualitative improvements are necessary to lessen or eliminate these reductions in combat efficiency. A new, full-vision groundcrew mask and new, less bulky gloves for aircrews and support personnel are being procured to improve our capability.

Collective protection (chemical shelters) remains our most critical near-term requirement. [Deleted] of our forces have collective protection. Currently our capability to sustain combat operations from contaminated air bases extends for only the length of time people can work in protective clothing. Collective protection systems are an absolute necessity for our aircrews and support personnel to eat, sleep, and take care of bodily functions.

Collective protection must be added to facilities such as combat operations centers and aircraft maintenance shops to provide uncontaminated work areas for mission continuity during chemical attack. Approximately 15 percent of personnel on an air base work in hardened buildings. The remaining 85 percent perform critical support functions essential to sortie generation, and should be protected in survivable collective protection systems. These systems are a hybrid of equipment and facilities consisting of prefabricated concrete pipe sections, air filtration systems, contamination control areas, and toxin-free (living) area. A more detailed explanation of collective protection was provided to Congress on 28 Feb 84 as requested by the FY 84 Joint Appropriations Conference.

Our detection and warning capability is extremely limited. Most of our detectors are manually operated, slow to respond, and limited by temperature due to wet-chemistry components. We have automatic point detectors for nerve-agent vapors only. We do not possess automatic electronic detectors for other agents, and we lack the ability to measure agent concentration. This capability is needed to verify the effectiveness of decontamination efforts, determine when it is safe to reduce the amount of protective equipment to be worn, and determine "all clear". We also lack an automatic, remote sensing, area detection system to provide advance warning of chemical attack. An automatic liquid detector for nerve and blister agents is planned for FY 85 procurement, and more advanced detectors integrated into a detection and warning network are in development.

Our decontamination capability is improving with delivery of lightweight decontamination systems. These systems produce steam and hot water to decontaminate the exterior of aerospace equipment. There is no capability to decontaminate avionics, aircraft interiors, and protective clothing. Research and development is underway to improve our ability to decontaminate vital resources.

Air Force personnel are actively involved in chemical defense training, practice exercises, and evaluations. An orientation is received upon entry into the Air Force. Personnel located in or deployable to high threat areas are trained within 30 days after arrival. Refresher training is conducted annually to maintain proficiency. Task qualification training is also conducted annually, which involves performing wartime duties while wearing protective equipment. In addition, personnel perform their jobs in protective gear during locally conducted exercises and formal evaluations administered by higher headquarters.

ATTACK WITH LETHAL CHEMICAL AGENTS

QUESTION: If the Warsaw Pact attacked US Air Force Europe bases, support facilities, and REFORGER airheads with massive amounts of persistent lethal chemical agents in the opening hours of a conventional war in Europe between NATO and the Pact, before the REFORGER process was underway, what impact would such an attack have on USAFE tactical operations? MAC operations? NATO's ability to conduct a successful conventional defense of Europe?

ANSWER: Generally speaking, if the Warsaw Pact successfully attacked US Air Force bases in Europe with massive amounts of chemicals in the opening hours of a conventional war, it could be disastrous for NATO and potentially decisive for the Warsaw Pact. It would degrade tactical and airlift operations [deleted] reduce individual performance [deleted] complicate US reinforcement from CONUS, and [deleted.]

It should be noted, however, several aspects of such an attack are not addressed. These include the effectiveness of NATO air defenses, the accuracy of the Warsaw Pact attack, and warning available to defenders.

STOCKS OF CHEMICAL PROTECTIVE MASKS/CLOTHING

QUESTION: In USAFE, at the wing level, what stocks of chemical protective masks and clothing are available?

At what level above the unit level are additional and replacement stocks of chemical protective gear located?

At which installations are these additional stocks of chemical protective gear stored?

Do you believe the Soviet Union is aware of the location of these additional stocks of chemical protective gear?

What priority do you believe the Soviet Union would place on destruction of these additional stocks of chemical protective gear if they should decide to make early and massive use of chemical weapons in an attack on NATO?

ANSWER: Air Force personnel in USAFE are authorized one chemical protective mask and three sets of the chemical protective ensemble (clothing) with one ensemble for training. Current stocks are 90 percent full. The full requirement for unit level equipment will be reached in FY 85. (This will provide for the survival of our forces, but with very limited sustainability.)

The Air Force does not have additional or replacement stocks above the unit level.

COMBAT OPERATIONS IN EUROPE

QUESTION: How long does the Air Force believe it could continue to conduct combat operations in Europe in a chemically contaminated environment based upon unit level stocks of chemical protective gear for its personnel?

ANSWER: Based upon the stocks and limitations of the current chemical protective gear and lack of collective protective systems, US Air Force units in Europe have a limited capability [deleted] to survive and operate in a chemically contaminated environment.

CHEMICAL PROTECTION FOR CIVILIANS

QUESTION: What measures have the Air Force taken to provide chemical protection for Department of Air Force civilians, host nation civilian employees, and dependents of active duty personnel and DAF civilians who are living or working on Air Force bases in Europe?

If the Air Force were unable to evacuate civilians, dependents, and other non-essential personnel from its bases in Europe before they came under attack with lethal chemical agents, what casualties does the Air Force anticipate among these people?

What is the Air Force's capability to provide medical care for the anticipated casualties in the answer to the above question?

ANSWER: Department of the Air Force civilians and host-nation civilian employees have protective clothing, are trained in protective measures, and participate in chemical defense exercises. Collective protection systems are being requested to protect these personnel during prolonged periods of contamination. Dependents are scheduled for evacuation before the outbreak of hostilities, which is consistent with defense plans on nuclear and conventional conflict. Dependents are provided training in evacuation procedures.

It is not possible to provide an accurate estimate of non-targeted individuals because an estimate is exceedingly scenario dependent. Factors such as weather conditions, distance from the attack point, type of agent, deployment means, attack warning availability and protection afforded by buildings greatly affect the number of potential casualties.

HOST NATION SUPPORT FORCES

QUESTION: Since a successful conventional defense of Europe may depend in large part on host nation support to our forces, how well does the Air Force believe host nation support forces with which it will operate are protected against chemical attack?

ANSWER: The Air Force believes host-nation support forces from Germany, the United Kingdom, the Netherlands, France, Belgium, and Denmark are well protected against chemical attack. Participation in NATO NBC defense meetings revealed that their ground support personnel have individual protective clothing, aircrews have protective flight gear, and some collective protection systems have been provided. Norway and Portugal have issued individual protective clothing to ground support personnel, but have not yet equipped aircrews. We believe other nations in Europe are not as well equipped.

MASSIVE ATTACKS

QUESTION: What impact does the Air Force believe massive attacks against USAFE bases using lethal chemical agents would have on the civilian communities surrounding those bases, and what effect does the Air Force believe this impact would have on its ability to conduct military operations?

ANSWER: The Air Force believes that massive attacks using lethal chemical agents would most likely be preceded by a high state of tension and build-up of forces. Such a period of advance warning would provide the opportunity for host nations to implement protective measures. Obviously, any massive attack using lethal chemical agents would hinder Air Force ability to conduct military operations.

U.S. CHEMICAL DETERRENT

QUESTION: How important to NATO's ability to conduct a successful conventional defense of Europe is a credible U.S. chemical deterrent?

ANSWER: A credible US chemical deterrent is very important. As with nuclear weapons, chemical deterrence requires a credible retaliatory capability. Without this capability, our theater forces remain at risk, and the nuclear threshold could be lowered.

ADDITIONAL EF-111A AIRCRAFT

QUESTION: Has the Air Force identified a requirement for additional EF-111 aircraft for logistical and attrition or other purposes?

Does the Air Force anticipate that production of the new dual role fighter, the F-15E, will release additional F-111s for possible conversion to EF-111s?

If the Air Force were to decide that additional EF-111 aircraft are necessary, when could such a decision be anticipated?

ANSWER: The Air Force has not identified a requirement for additional EF-111 aircraft. However, due to projected peacetime attrition, it is unlikely that the planned buy of 42 EF-111s will support 36 combat coded aircraft over the life cycle of the airframe. Based on this and the projected 1990s threat, the need for additional tactical jamming capability, irrespective of airframe, is recognized by the Air Force. Therefore, a decision to increase our tactical jamming capability could be made after a requirement is defined.

The F-15E will augment the limited numbers of F-111s in the long range airfield attack/interdiction mission, day or night, or in adverse weather; however, it will not replace the F-111. Both the F-15Es and the F-111s will be required to attack these high value airfields and interdiction targets and thus deny the enemy a rear area sanctuary. Accordingly, the Air Force does not plan to release additional F-111s for conversion to EF-111s.

JTIDS AND ENHANCED JTIDS

QUESTION: Last year, it appeared that the controversy involving JTIDS and Enhanced JTIDS (EJS) had been settled to the satisfaction of the Air Force, the Navy, and the Department of Defense. Now, there are reports that new difficulties have arisen. Please describe the Air Force's position on EJS, JTIDS, and the future course of both programs.

ANSWER: The Air Force position is that EJS and JTIDS are complementary systems designed to satisfy two different requirements: EJS to prevent the enemy from disrupting existing, vital line-of-sight voice communications on a broad range and large number of platforms, and JTIDS to provide an improved command and control (C^2) capability on a limited number of key platforms. While the requirement for voice communications is the more critical, the two-system approach will provide the most cost effective solution to Air Force anti-jam communication requirements.

EJS COMPATIBILITY WITH JTIDS

QUESTION: EJS compatibility with JTIDS was an issue last year. I thought it had been resolved to the satisfaction of all parties. What is the Air Force's view of the compatibility issue as it now stands?

ANSWER: Air Force plans now call for providing EJS compatibility with JTIDS via an EJS Time Division Multiple Access (TDMA) voice capability in L-Band. This will provide for Air Force interoperability with Navy, Army and allied JTIDS in L-Band at a medium level of jam-resistance.

EJS will use a unique waveform in an alternate band to meet the Air Force's requirement for a high level of jam-resistance. While specifically optimized to do the high jam-resistant voice job, this unique waveform will have many characteristics in common with the TDMA waveform. This approach should enable taking advantage of the processor capability used for TDMA voice in L-Band.

In summary our present approach should adequately and appropriately provide for interoperability with other JTIDS users while satisfying the Air Force's requirement for a highly jam-resistant voice capability.

SURFACE-TO-AIR MISSILE PROTECTION

QUESTION: I asked the Army for their views on the utility of providing surface-to-air missile protection for such vital facilities as Carribean Command Headquarters, CENTCOM Headquarters, and NASA and Air Force space launch facilities in Florida. To paraphrase their response, they stated that continental air defense is an Air Force mission, but if the mission were realigned and they were provided the resources, they would do the job. They declined comment on the vulnerability of these facilities to air attack from Cuba. Given the increasing number and sophistication of aircraft in the Cuban inventory, do you believe surface-to-air missiles would improve the air defenses of these and other facilities within unrefueled operating range of these Cuban aircraft?

ANSWER: The last Army surface-to-air missile batteries supporting North American Air Defense were closed in the 1970s. The final units were in Florida and Alaska. The decision to eliminate these units was based on realignment of funding priorities to match guidance. Tactical Warning and Attack Assessment now ranks well ahead of damage limitation as a strategic defense initiative. Currently, we accomplish Tactical Warning and Attack Assessment through the use of radar surveillance and interception of unknown aircraft by USAF fighters.

Recent NORAD studies indicate that the reintroduction of Army SAM assets into the air defense force structure could improve our defensive posture, but, as you know, a conscious national decision was made in the early 70s not to point defend potential US targets. Therefore, plans for surface-to-air missile defense would require a major realignment of our national defense strategy and funding priorities.

CUBAN AIR STRIKES

QUESTION: If a Cuban air strike against our space launch facilities in Florida, using conventional weapons, were to destroy several Shuttle orbiters and Air Force expendable boosters on the ground, what effect would that have on our national security?

ANSWER: We depend on the Florida facilities for launching all of our geosynchronous satellites, including communications and early warning; this capability would be lost or seriously impaired, depending on the severity of the damage. Loss of shuttle orbiters would be particularly damaging because there will be only four of them. Further, only two will be modified to be compatible with the Centaur upper stage. By the early 90s, all military geosynchronous payloads will depend on the Shuttle/Centaur combination for launch. Therefore, loss of the two Centaur-compatible orbiters would be the worst case situation. After the current production ends next year, the lead time to replace an orbiter will be very long — about four or five years at a minimum. Loss of expendable launch vehicles would be less serious, provided a production pipeline exists; however, under current plans we are phasing out production. If commercial concerns undertake to produce expendable launch vehicles, this loss would be ameliorated. Under the most extreme circumstances, we could launch into a geosynchronous orbit from Vandenberg AFB. A launch of this type could result in impact of debris on populated areas and would only be attempted if a true national emergency existed.

QUESTIONS SUBMITTED BY SENATOR JOHNSTON

B-1B FUNDING

QUESTION: What is the total funding by program and appropriation account for the B-1B Bomber program and programs directly related to the B-1B for each year from FY 81 - FY 89 in terms of budget authority and outlays?

How would that funding change in each year if the B-1 were cancelled on July 1, 1984?

ANSWER: The baseline B-1B program is as follows:

(TY $ in Billions)

Fiscal Year	1981	1982	1983	1984	1985
RDT&E	0.22	0.47	0.75	0.74	0.51
Weapon System	-	1.61	3.87	5.57	7.10
Initial Spares	-	-	0.17	0.55	0.61
TOTAL	0.22	2.08	4.79	6.86	8.22

Fiscal Year	1986	1987	1988	1989	Total
RDT&E	0.37	0.14	0.03	-	3.23
Weapon System	5.43	-	-	-	23.58
Initial Spares	0.16	-	-	-	1.49
TOTAL	5.96	0.14	0.03	-	28.30

Multiyear Procurement Outlays *

1983	1984	1985	1986	1987	1988	1989
0.40	1.76	4.49	5.77	5.12	2.06	0.42

By July 1984, approximately 49 percent of the B-1B program will have been funded, the first 18 B-1Bs will have been procured, and the initial 100 F101-GE-102 engines will have been purchased. Most of the funding for the B-1B program has been front loaded to gain the most from multiyear procurement methods, cover the initial research and development, and pay for factory tooling.

Contract penalties for early cancellation, resultant advance procurement losses, and the continuation of essential research and development would reduce the savings achieved by a premature cancellation of the planned program. We estimate the net cost avoidance by a cancellation in July 1984 when compared to the planned program to be less than a third of the total program.

Phrased another way, a July 1984 cancellation could result in the average price of each B-1B aircraft increasing over three and a half times the current per unit estimate.

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* As displayed in the B-1B Multiyear Procurement Justification Exhibits provided 7 March 1983

MX PEACEKEEPER MISSILLE PROGRAM

QUESTION: What is the total funding by program and appropriation account for the MX Peacekeeper Missile for each year from FY 1981 through FY 1989 in terms of budget authority and outlays?

How would that funding change in each year if the MX Peacekeeper missile were cancelled on 1 July 1984?

How would that funding change if the MX Peacekeeper Missile production were held at no more than 24 missiles per year until 223 production missiles were procured? How would MX Peacekeeper costs change?

How would that funding change if the MX Peacekeeper Missile production were held at no more than 36 missiles per year until 223 production missiles were procured? How would MX Peacekeeper unit costs change?

ANSWER: The chart below reflects the total funding by program and appropriation account for the Peacekeeper and small missile programs for each year from FY 81 through FY 89.

ICBM MODERNIZATION BUDGET AUTHORITY AND OUTLAYS

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	TOTAL
BUDGET AUTHORITY ($ ARE IN MILLIONS)										
RDT&E										
M-X*	1491.6	1899.7	481.4							3872.7
PEACEKEEPER IN MM			1912.6	1984.9	1716.3	852.3	312.6	29.8	2.1	6810.6
SMALL MISSILE***				467.3	724.5	643.7	TBD	TBD	TBD	TBD
PROCUREMENT										
PEACEKEEPER (INCLUDES INITIAL SPARES)				2157.4	3171.9	2832.9	2727.6	2504.0	935.1	14329.9
MILITARY CONSTRUCTION										
M-X*	17.1	11.0								28.1
PEACEKEEPER			16.7	31.2	114.0	77.9	60.0	20.7		320.5
TOTAL BUDGET AUTHORITY	1508.7	1910.7	2410.7	4640.8	5726.7	4406.8	TBD	TBD	TBD	TBD
OUTLAYS** ($ ARE IN MILLIONS)										
RDT&E OUTLAYS	1431.4	1488.3	1587.5	2764.0	2603.7	1812.5	TBD	TBD	TBD	TBD
PROCUREMENT OUTLAYS	0	0	0	443.0	1092.3	2281.8	2836.5	2738.5	2429.1	11821.2
MILITARY CONSTRUCTION OUTLAYS	9.9	17.7	3.2	12.5	36.5	74.0	77.1	62.6	34.6	328.1
TOTAL OUTLAYS	1441.3	1506.0	1590.7	3219.5	3732.5	4168.3	TBD	TBD	TBD	TBD

NOTES: * Peacekeeper in Minuteman Silos program began in FY 1983. M-X funding refers to other missile and basing mode and construction planning sunk costs.

** Outlays include prior years (79 & 80)

*** Small missile "TBDs" are due to embryonic nature of program

If the Peacekeeper program were cancelled on 1 July 1984, the sunk cost would total $6,607M. The FY 84 obligated funds would be $2,250M. Contract termination costs could total about $450M. For research, development, test and evaluation (RDT&E), expenditures would be $900M. For procurement, expenditures would be $133M.

If the Peacekeeper program were cancelled, the loss of RDT&E funding for Peacekeeper would impact the small missile program.

Development of guidance and reentry vehicles needs to be sustained to maintain contractor capabilities and to support a small missile demo flight in FY 88. Full scale development would experience increased hardware costs since the Peacekeeper production line would not provide test assets such as reentry vehicles for the small missile effort. Additionally in FY 90, the guidance and reentry vehicle production lines would have to be reopened. This would increase small missile procurement costs by about $500M in FY 90. The year-by-year impact to the small missile program if Peacekeeper were cancelled would be:

($ In Millions)

FY 84	85	86	87	88	89	TOTAL
+85	+240	+150	+60	+88	+89	+720

The table below reflects how funding would change if Peacekeeper missile production were held at no more than 24 missiles per year. Total cost of the program would increase by $3.3B, due to a decrease in production efficiency and the impact of inflation.

($In Millions)

	84	85	86	87	88	89	90	91	92	93	Total
Procurement	0	-630	-790	-720	-640	+950	+1670	+1630	+1500	+370	+3340
Buy Quantity	21	24	24	24	24	24	24	24	24	10	223

The current Peacekeeper unit cost is $64.3M with an initial operational capability (IOC) of December 1986 and a full operational capability (FOC) of December 1989. A revised program with procurement held at 24 missiles per year would result in a unit cost of $79.1M, retain the same IOC, but the FOC would slip three years to December 1992.

The table below reflects how funding would change if Peacekeeper missile production were held at no more than 36 missiles per year. Total cost of the program would increase by $1.5B, due to a decrease in production efficiency and the impact of inflation.

($ In Millions)

FY	84	85	86	87	88	89	90	TOTAL
Procurement	0	-120	-470	-310	-120	+1270	+1260	+1510
Buy Quantity	21	36	36	36	36	36	22	223

A revised program with procurement held at 36 missiles per year would result in a unit cost of $70.7M, retain the same IOC and FOC, but would slow the planned operational flight test schedule due to a lack of test assets.

Staying on the President's schedule for Peacekeeper provides a smooth transition to procurement years of the small, single-warhead missile system. Peacekeeper development provides the technology base for the small ICBM. The two schedules of these elements of ICBM modernization are now meshed so they can be affordable. No spike funding requirement years will exist for ICBM modernization.

SUBCOMMITTEE RECESS

Senator **Stevens**. We do have a hearing set next Tuesday when we will hear the Navy's request.

Thank you very much.

Secretary **Orr**. Thank you, Mr. Chairman.

Senator **Stevens**. The subcommittee will be recessed, subject to the call of the Chair.

[Whereupon, at 12 noon, Tuesday, February 28, the subcommittee was recessed to reconvene at the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1985

TUESDAY, MARCH 6, 1984

U.S. Senate,
Subcommittee of the Committee on Appropriations,
Washington, D.C.

The subcommittee met at 10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Ted Stevens (chairman) presiding.

Present: Senators Stevens, Andrews, Kasten, Rudman, Cochran, Stennis, and Johnston.

DEPARTMENT OF DEFENSE

Department of the Navy

U.S. Marine Corps

STATEMENT OF HON. JOHN LEHMAN, SECRETARY OF THE NAVY ACCOMPANIED BY:

ADM. JAMES D. WATKINS, CHIEF OF NAVAL OPERATIONS

GEN. P. X. KELLEY, COMMANDANT OF THE MARINE CORPS

REAR ADM. DANIEL L. COOPER, DIRECTOR OF OFFICE OF BUDGET AND REPORTS AND DIRECTOR OF FISCAL MANAGEMENT DIVISION

OVERVIEW OF NAVY BUDGET REQUEST

BUDGET REQUEST

Senator Stevens. We will ask you to proceed with your statements. For once, we will ask you not to summarize them, to read them like they are, or we will put your statements in the record, in any event, when the reporter arrives.

This is the time set for the overview of the Navy's budget request for the fiscal year 1985. That portion in the Navy's budget before this subcommittee totals $98.6 billion, an increase of $19.5 billion over appropriations to date for fiscal year 1984. When adjustments are made to account for change in the financing procedures for military retirement, the current request is about 12 percent real growth. The request contains the large growth patterns from prior years of shipbuilding, aircraft, and other procurement but is tempered by a 4-percent increase for the Marine Corps.

PREPARED STATEMENTS

Let me welcome you here this morning, Mr. Secretary, and Admiral Watkins, and General Kelley. We have the prepared statements from Admiral Watkins, the Navy Budget Director, Admiral Cooper. They, too, will be included in the record.

[The information follows:]

PREPARED STATEMENT OF JOHN F. LEHMAN, JR.

SECRETARY OF THE NAVY

Mr. Chairman, I welcome this opportunity to offer my assessment of the current posture of the Navy/Marine Corps team for Fiscal Year 1984.

Three years ago, the President presented to Congress a program to achieve clear maritime superiority. As the President has put it:

> "Though the Soviet Union is historically a Land-power, virtually self-sufficient in mineral and energy resources and land linked to Europe and the vast stretches of Asia, it has created a powerful blue ocean Navy that cannot be justified by any legitimate defense need. It is a Navy built for offensive action, to cut free world supply lines and render impossible the support by sea of free world allies. By contrast, the United States is a naval power by necessity, critically dependent on the transoceanic import of vital strategic materials. Over 90% of our commerce between continents moves in ships. Freedom to use the seas is our nation's life blood. For that reason, our Navy is designed to keep the sea lanes open world wide — a far greater task than closing those sea lanes at strategic choke-points. Maritime Superiority for us is a necessity. We must be able in time of emergency to venture in harm's way, controlling air, surface and subsurface areas to assure access to all the oceans of the world. Failure to do so will leave the credibility of our conventional defense forces in doubt. We are ... building a 600 ship fleet including 15 carrier battlegroups."

As this Committee well knows, this effort is but one component of our national defense strategy. Nevertheless, it is a fundamental requirement necessary for the success of any national strategy.

You will recall that the program put before the Congress three years ago was simple and well defined. It was built upon seven elements:

— First, a more realistic strategy for the use of Navy/Marine Corps forces to maximize their deterrence in peacetime, and to prevail if deterrence fails.

-- Second, the restoration of the quality, training and morale of our personnel.

-- Third, the restoration of the readiness of the Navy and Marine Corps through adequate maintenance, repair, spare parts and support.

-- Fourth, the modernization of our sea-based nuclear deterrent, the most survivable and enduring component of the US strategic TRIAD.

-- Fifth, the establishment of a shipbuilding reactivation and conversion program to increase the force with the right kinds of ships and to save an industrial base on the verge of collapse.

— Sixth, to establish an aircraft modernization and procurement program to restore aircraft numbers and quality to meet operational requirements.

-- Seventh, to build up stocks of ammunition and missiles to realistic objectives for sustaining combat.

Progress Report

I am pleased to report that our objectives remain the same today as originally outlined three years ago and that the Navy and the Marines

Corps are on course and on schedule in achieving them. In fact, we are considerably further along than is generally recognized. Taking each of the seven elements in turn:

Strategy -- The global maritime strategy set forward three years ago has been continuously refined and applied to training, exercising and programming. It is of course derived from some 40 treaty relationships and a web of resource, energy, and security dependencies and dictated by the nature of the Soviet threat to the maritime lifelines of the free world.

The refinement and application of our maritime strategy has taken place in a very effective process using annual Navy and Marine Corps exercises to develop theater and local tactical maneuver options; by testing particular real-world hypotheses in wargaming and simulation, and above all by the constant testing and feedback with our deployed forces and operational and theater commanders. The result has been a growing confidence in the effectiveness and validity of our maritime strategy.

Personnel -- The past three years have seen the most dramatic change in the manning of the Navy and Marine Corps in the 208 years of our history. From the worst retention and recruiting in post-war history, we have risen to the highest figures we have achieved since we have been keeping records. We are meeting 100% of our recruiting goals, and have achieved 92% high school graduates. In virtually every category, we have increased retention to record highs, in skilled enlisted ratings, in pilots and NFOs, in nuclear-trained personnel, and surface warfare officers. From a situation three years ago when some of our ships could not deploy on schedule because the fleet was manned at only 91%, we are now at 100% manning for a Navy that has grown by nearly 50 ships. In 1981, 13% of ships, 25% of aircraft squadrons were reporting themselves not combat ready as a result of personnel shortages. Today that percentage has dropped to less than 1% and 4% respectively, with any shortages reported being remedied in very short order. The petty officer shortfall, which stood three years ago at 22,000, has been reduced now to below 9,000 and will be eliminated by 1988 if current trends continue.

The reorganization of the Naval Reserve to a "horizontal integration" has had the effect of shifting a substantial portion of our force structure manning to the ready reserve. A total of 35 ships of the 600 ship Navy will be manned by selected reserves, in addition to the augmentation of all naval units by selected reserves upon mobilization. The Fifteenth Active Carrier Airwing has been deleted from the program and the Fifteenth Carrier will be manned by a reserve airwing.

Readiness -- William James once said that the best propaganda for naval forces is the naked event. The naked events of recent months in the eastern Mediterranean, the Caribbean, and in unprecedented levels of multi-carrier and amphibious Atlantic and Pacific exercises have illustrated why the Navy and Marine Corps have kept the readiness of existing forces at the very top of spending priority. The fleet is more ready to go in harm's way than at any time in peacetime history. In the past three years, surface ship combat readiness has improved by 14% and aviation readiness by 24.2%. Three years ago only five of our twelve aircraft carriers could be deployed with the required aviation spare parts support. During the past year we have had eight of our thirteen carriers simultaneously deployed with the required spare parts support.

Seabased Nuclear Deterrent -- The modernization of our seabased leg of the strategic deterrent is proceeding well. A total of 11 Trident submarines have been authorized through FY 1984, and the problems which once plagued the shipbuilding program are over. The first four Trident submarines have been delivered. The fourth, GEORGIA, delivered last month, some six weeks ahead of the contract delivery date. Remaining TRIDENT submarines under construction are ahead of schedule and are within or below budget. Two are conducting deterrent patrols and the third is making final preparations for patrol. Their performance has exceeded all significant design criteria.

The D-5 program to provide a more accurate, larger payload Trident missile is on schedule and within budget for a 1989 IOC.

In the most vital area of strategic command and control, the ELF communications system is partially operational and the Tacamo upgrade program is in the final planning stage.

Shipbuilding -- Three years ago the President set a goal of doubling the Naval shipbuilding program. We have maintained that ambitious goal and with it have brought a new efficiency and discipline to its management, while increasing the percentage of ships competed from 26.3% in FY 81 to 86.4% in FY 84. From the 479 battle force ships which existed when President Reagan took office, the fleet will grow to 525 by the end of FY84, 545 by the end of FY85, and 600 by 1989. There are currently 118 Naval ships under construction or conversion for the Navy at 19 different yards in the United States. Nearly all of the ships in the five-year plan submitted with this budget are to maintain rather than build to the 600 ship Navy.

The Reagan goal of doubling our naval shipbuilding program arrived in the nick of time to reduce the irreparable damage to the shipbuilding industry. The Navy accounts for three fourths of all shipbuilding and repair work in U.S. yards.

Aircraft -- In each of the eight years preceding the Reagan rearmament program, the Department of the Navy was not able to procure enough aircraft to replace those lost through peacetime attrition and retirements. In each of the past three years, however, naval aircraft procurement has been nearly doubled over those years, and procurement of aircraft spares has been tripled. These high rates of procurement have been maintained, despite successive budget cuts during those years, because of an historic reversal of cost trends in naval aircraft programs. For the first time in history all naval aircraft procurement programs are on a firm, fixed-price contract basis, precluding production cost overruns, and the annual prices of our new tactical aircraft have actually been coming down. Competitive pressures have been maintained by keeping four separate fighter and attack aircraft in production.

The first Navy and Marine Corps strike fighter squadrons have begun operations with the F/A-18 Hornet which is now in full-rate production.

As part of the Reagan Administration emphasis on the Ready Reserve, reserve units have been established and are flying P-3Cs, S-3s, SH-2s, A-6Es, EA-6Bs, F-14As, A-7Es, and F/A-18s. Some of these flying units are augmentation units to fill out fleet squadron strength upon mobilization, and others are commissioned squadrons.

Weapons and Ammunition -- In the decade preceding the Reagan Administration, the Marine Corps was unable to procure sufficient ammunition to replace the stocks expended in peacetime training. During that same period, the Navy was held to such low levels of procurement of ammunition, missiles and torpedoes that three years ago it was impossible to load out a reduced fleet of 479 ships even once with full magazines. Such enormous shortages built up over a decade are not going to disappear overnight. But three years of sustained growth has now begun to refill our munitions stockpiles. Ammunition and weapons funding was increased by $4.2 billion over the last three years and the lowered prices through these more efficient procurement rates have made it possible to achieve our warfighting sustainability goals by 1989.

The Navy is Ready

As the progress outline above makes clear, the course to reestablish maritime superiority has been set, and we are well along the way. We have achieved an effective balance between building for the future and making the fleet we have today a ready-fighting force. The results achieved have added enormously to our deterrent capability. The fleet and the fleet Marine force are more ready to go in harm's way than at any time in post-war history.

Naval Operations in 1983

It is well known to this Committee that the Navy and the Marine Corps are always fully committed and forward deployed all over the globe where our vital interests are involved. Last year we outlined the new concept of peacetime deployments called "FLEXOPS." Under this policy we have completely reordered our methods of peacetime deployment of naval forces to add much more realistic multi-carrier and amphibious operations, greater flexibility for theater commanders, and far more useful training; while at the same time, we have been reducing the time out of homeport for our Navy and Marine Corps personnel. This new concept of operations has allowed the Navy to undertake the major peace-keeping operation in Lebanon and the regional security operation in Grenada without disrupting or reducing our peacetime deployment elsewhere in the world. The operations of the battleship NEW JERSEY provide an excellent illustration of the inherent flexibility of our naval forces. In June of 1983, NEW JERSEY left Long Beach on what was to have been a 2 1/2 month shake-down cruise to the western Pacific. As you are well aware, she is now, 9 months later, off the coast of Lebanon in support of the Multi-National Force. In the meantime she has traveled to Thailand and the Philippines for joint exercises, transited to Central America where she cruised off the coast for several weeks, transited the Panama Canal and proceeded at 25 knots non-stop to her current position off Beirut. NEW JERSEY remains today one of the most ready ships in the Navy, thanks to the spirit and quality of her sailors, her excellent material condition, and no little help from the ready reservists who have been doing active duty aboard to allow permanent crew members to go home on leave.

Despite these peacekeeping operations, the fleet has continued to participate in major multi-national exercises in theaters and ocean environments where operations must take place in wartime. The product of these exercises has been invaluable experience in training for the participants and invaluable lessons learned to improve training, tactical innovation, and development and procurement programming. Combat forces from the U.S. Army and Air Force, as well as our allies, have participated in these major exercises on which the Commandant and the Chief of Naval Operations will elaborate in more detail.

We are particularly proud of the progress that has been made in the last three years in integrating United States Air Force and United States Navy and Marine Corps forces in joint exercises. Air Force AWACs, fighter attack and tanker participation in naval exercises is now routine and extremely effective. Similarly, Navy and Marine air support of the land battle is proving of unique value and flexibility in every theater.

Department of the Navy Management Initiatives

The substantial progress achieved in three years in the Naval Recovery Program is testimony to the success of the dramatic reform of development and procurement under Secretary Weinberger. Three years ago he reversed a long and disastrous trend toward centralization of management and diffusion of accountability. His leadership has brought about a new discipline and a new accountability. Management authority has been returned to the Service Secretaries, and far reaching reforms have been undertaken by them. The Committee should take special note of five fundamental changes made in the management of the Department of the Navy:

First, program stability. You will note that the personnel, readiness, shipbuilding and aircraft procurement goals have not been changed as I present to you the fifth Reagan Recovery Budget. This stability is unprecedented in peacetime history, avoiding the ragged ups and mostly downs of previous five-year plans with the terrible cost and efficiency penalties that such uncertainity brings. The multiyear procurement of such systems as the C-2 aircraft and the MK 46 Torpedo has resulted in both program stability and savings to the taxpayer of $169M.

Second, we have sought true competition, not merely the appearance of competition through source selection and then the awarding of production monopolies. We have pursued a policy of establishing second sources in every appropriate program. We have raised the percentage of competition in our shipbuilding from 26.3% in 1981 to 86.4% in 1984. We have established at flag rank, a Competition Advocate functioning in my office and in the Naval Material Command with very real power. As a result of our pursuit of more competition, the percent of all our procurement transactions awarded competitively has risen from 28.4% in FY81 to 39.5% in FY83. This has been an increase of 137,000 competitive transactions, representing a new business face for the Navy.

Third, new discipline and accountability have been brought to contracting policy. There is now a more equitable sharing of the risk between the government and its contractors, providing increased incentive for excellent performance and immediate contractor penalty for poor performance. Cost-plus type contracts are no longer considered the norm, as previously, but as a necessary evil to be resorted to only in the most exceptional circumstances.

Fourth, the establishment of a firm discipline to resist the tendency to seek ever greater capabilities for every system. Unfortunately, the best is usually the enemy of good enough. Gold plating is now under firm control in the Department of the Navy.

Fifth, investment in high technology to save money as well as increase capability. The leverage of high technology must always be a fundamental tool of American defense policy. We can never hope to match the numerical superiority of a totalitarian adversary such as the Soviet Union. We can, however, maintain superiority through the leverage of high technology. The facile arguments that cheaper and smaller is better have been invalidated time and again in the Gulf of Sidra, the Bekaa Valley and the Falklands.

Today TICONDEROGA, the first AEGIS cruiser, is on station in the eastern Mediterranean with many times more capability and significantly less manning than the cruiser of two decades ago. TICONDEROGA is manned by only 300 enlisted men and 26 officers, whereas a cruiser 20 years ago was manned by 1300 sailors and 300 officers.

Another good example is the F/A-18. Because the Department of the Navy invested in high technology, this aircraft is currently requiring about 1/3 of the maintenance hours per flight hour of the aircraft it replaces. As a result, we are able to man F/A-18 squadrons with 50 fewer personnel than the aircraft squadrons they replace. Perhaps the most dramatic payoff for aviation high tech has come in aircraft safety. The Navy Department just completed its safest year in history for the third straight year. Major accidents per 100,000 flight hours have dropped to only 4.33. The current generation of high-tech naval aircraft, such as the F/A-18 and the F-14, now have a safety record about 20 times better than the so called simple low-cost fighters of 30 years ago.

Results

The results of these management initiatives are quite dramatic. A few highlights are listed below.

-- Difficulties with the shipbuilding industry in constructing naval ships have been resolved. After years of disputes, delays, claims and overruns in our submarine construction programs, all submarines have been delivered on or ahead of their contract delivery dates for the last two years. For the first time in many, many years there is not a single new construction contract shipbuilding claim outstanding against the Navy.

-- Aircraft carriers. The contract for CVN 71, THEODORE ROOSEVELT, was modified to include an incentive clause for delivery of CVN 71 up to 14 months in advance of the contract delivery date. This is expected to result in a net savings to the government of approximately $74 million. That ship is now ahead of even that accelerated schedule and has a tentative launch date in October of this year, 17 months ahead of original schedule.

The FY83 multiship contract for CVN 72, ABRAHAM LINCOLN, and CVN 73, GEORGE WASHINGTON is expected to result in savings to the taxpayer of $750 million, with a total of 44 months acceleration of delivery for the ships when compared to the Navy's traditional plan.

-- Aegis cruisers. Bath Iron Works was selected as a second source to compete with Litton for procurement of Aegis cruisers. Contracts were signed this past December for the first three cruisers to be competitively awarded -- two to Litton, one to Bath. The cost reduction in this first year of competition was sufficient to achieve a net constant dollar savings in our FY84 contracts of over $100 million compared to the FY83 sole source award.

-- Battleships. NEW JERSEY was recommissioned in December 1982, five weeks ahead of schedule and under the budget and is now on station off Beirut after an unprecedented deployment that may extend to more than a year. IOWA has been accelerated and is expected to join the fleet in April. Long-lead procurement, planning and preparation is going forward for the reactivation of MISSOURI in the Long Beach Naval Shipyard.

-- Build/Convert and Charter Programs. Thirteen maritime prepositioning ships and five T-5 tankers have been contracted for and are under conversion and construction. The TAKX maritime prepositioning ships will provide the capability to preposition the equipment and supplies to support three Marine Amphibious Brigades in areas of potential crises around the world. This innovative strategic program will greatly enhance the flexibility of military strategy, the future of the U.S. Merchant Marine, and the maintenance of the U.S. shipbuilding industrial base. Moreover, the program will be completed 18 months ahead of original defense guidance.

-- 82.3% of FY84 ship contracts were contracted in the first quarter, the best record in Navy contracting history. -- Firm fixed price or fixed price 50-50 shareline contracts have become the standard in our shipbuilding program. In calendar year 1982, 25 ships were delivered to the Navy, of which 12 were on time and 7 were a total of 11 months ahead of schedule and 19 were either on or below budget. In calendar year 1983, 21 ships were delivered, of which 12 were on time, 8 were a total of 22 months ahead of schedule and 13 were either on or below budget.

-- Three years ago, 26% of the ships in our shipbuilding program were awarded competitively and 74% sole source. In the FY84 shipbuilding program, 19 of the ships will be awarded competitively and only 3 sole source.

-- All aircraft procurement contracts through 1983 have been signed on a firm, fixed-price basis and have resulted in an average 9% savings below the budget.

-- In a major Reagan Administration effort to reinvigorate the maritime industry and the merchant mariner profession, a total of 34 ships, including 12 T-AGOS, 13 Oceanographic and 4 sealift ships, will be offered for contract manning in the current year. Five point-to-point ships will be retired, with commercial services performing their functions. This follows the decisions in 1982 to commercially man the 13 TAKX ships and five T-5 Tankers.

-- The Navy Department increased by 28.6% in dollar value awards to small business, including women-owned and minority concerns. These contracts to small business totalled $8.38 billion in FY-83, reflecting a new commitment to bring the benefits of competition and the small business industrial base to Navy procurement.

-- An Air Characteristics Improvement Board has been established to control design and equipment changes in production aircraft. This will be a very effective obstacle to gold plating and will carry into force a "block upgrade" policy whereby necessary changes are made only with new annual contracts and are priced and negotiated at that time rather than piecemeal in the middle of production runs. Very substantial savings will be the result.

-- Organizational changes to Navy Material Command. Major organizational changes have been made in the Navy Material Command to promote procurement competition, to improve planning, cost control and schedule control in industrial facilities, to decentralize management authority, and to increase management discipline and accountability.

-- New program initiation procedures have been established, imposing a much firmer discipline for the start of new research and development programs.

-- Total number of Navy R&D Programs has been reduced from 532 to 421 in FY85.

-- Establishment of independent cost estimating. A new independent cost estimating organization has been established under the Comptroller of the Navy to independently advise the CNO, Chief of Naval Material and Navy Secretariat on program cost estimates.

-- Establishment of the Navy Acquisition Reporting System. A new, simple and straight forward acquisition reporting system has been established in the Department of the Navy for the 60 top programs. This reporting system requires quarterly reports on any changes of estimated costs for research and development or production on each of these programs and provides early warning of performance difficulties. While this reporting system is primarily meant for senior navy management, its effectiveness makes it a prime candidate for eventual replacement of the current Selected Acquisition Reporting System.

-- Project budget officer reorganization. A fundamental change to major project organization is underway to establish in each project a budget officer, independent of the project manager, who works not for the project, but for the comptroller of the Material Command.

--Reorganization of the weapons systems acquisition management career field. There are currently substantial shortages of qualified and experienced acquisition managers in the Navy and Marine Corps. To remedy this, we have established a new program to draft quality personnel with established professional warfare specialties into the acquisition field. Completion of this reorganization may require subsequent legislative proposals.

-- Revision of guidance to promotion boards. Guidance to promotion boards has been modified to increase emphasis on the performance of officers in acquisition management billets.

-- Revision of assignment policy for program managers and industrial facility commanders. The minimum tour length for officers serving in these important acquisition billets has been lengthened to four years. Arrival and departure from these assignments now is planned to coincide with major DNSARC milestones and/or program starts or completions.

-- Increase in manning of Navy plant representative offices. Substantial increases were begun in calendar 1983 and will continue in subsequent years to the numbers of naval personnel managing contracts in contractor plants.

-- Establishment of BOSS. The Department of the Navy has instituted a spare parts procurement program called "Buy Our Spares Smart." It is particularly frustrating to us to find those abuses and instances of overcharging that we have uncovered and recovered, being used by critics to discredit the very effort itself. Working with suppliers and parts contractors, we have made great progress in locating abuses, receiving refunds, challenging sole source relationships, locating alternate sources, and reducing barriers to competition for spare parts by identifying and eliminating proprietary data requirements. There are more than 2.1 million inventory items in the Navy spare parts supply system, and we will methodically examine each and every line item.

Department of the Navy Budget Fiscal Year 1985

The Source of the Navy/Marine Corps Budget. Commentators with little knowledge of defense policy have criticized the Service budget requests as exercises in simply asking for more programs that have a momentum of their own. Nothing could be further from the truth. As described above, the preparation of the 1985 budget began with the foundation of national strategy and the maritime objectives assigned to the Navy and the Marine Corps. From maritime strategy came the force planning requirements. The strategy and the force levels have, throughout the year, been refined and tested in multi-national exercises, simulation and wargaming. The most important inputs to the preparation of the budget are the semi-annual assessments of the operational and theater commanders in their net assessments and recommendations for funding priorities. The lessons learned from real-world operations and conflicts such as the Falklands and the Middle East, are applied and often further modify the budget planning. From the start of this FY85 process January a year ago the application of common sense in placing priority on the "war stoppers" has been applied throughout. After exhaustive scrubbing and debate within the Department of Defense and with other agencies of the government, the Department of the Navy budget has been completed.

Personnel Readiness. The FY85 budget continues to place personnel readiness at the top of spending priorities as in the previous three budgets. Nothing is more important than our personnel. The tremendous turnaround in morale and personnel quality and performance has proved to the skeptics that, for the Navy and Marine Corps, the all-volunteer force produces a better and a readier force for the long term than a peace-time draft. The success, however, depends on the maintenance of adequate compensation and adequate quality of life. Nothing is more important than maintaining budgetary support for those priorities. Our budget request contains the following priority programs:

-- A 5.5% pay raise.

-- Continuation of the selective reenlistment bonus program, modified to keep pace with a changing economic environment. It is essential that we have the ability to adjust and target the bonus as necessary to retain the technical skills required to man the fleet.

-- An active force increase of 10,500, for a total of 575,300 for Navy, and 3,000, for a total of 199,500 for the Marine Corps. Reserve force structure improvements call for increases in pay billets for Navy of 8,700, to reach a total of 124,200, and 2,200 for the Marine Corps, to reach a total of 44,300. These modest increases in end strength are essential to man the growth in the Navy and Marine Corps. We will be adding about 20 ships per year until 1989, and we must have additional sailors to man those ships. Because of last year's congressionally imposed ceiling, we have already had to cut manning of shore activities supporting the operating force to below cost-effective levels. Reductions in the FY85 personnel end-strength request would end up creating serious problems and cost the taxpayer money.

-- Aviation officer career pay. One of the most dramatically successful and cost-effective compensation program initiatives in Navy history has been the AOCP program. Retention of naval aviators has nearly doubled in the last three years of paying AOCP. Pilots and naval flight officers are currently being retained at the rate of 58% and 74% respectively. Since the inception of the program, 587 additional aviators have remained on active duty as a direct result of AOCP. The resultant cost savings were $482.6 million which would have been needed to train their replacements. The 1981 shortage of 2,332 mid-grade aviators has now been reduced to only 1,087. There are, however, even larger savings more difficult to quantify. The much higher experience level in naval aviation today has brought about the third straight record year in aviation safety. Since 1981, 80 aircraft have been saved compared to what would have been lost due to pilot error at the accident rate prevailing before the inception of AOCP. This has resulted in a dollar savings of approximately 485.5 million dollars. In accordance with Congressional guidance in the 1984 bill, we expect to modify the application of the bonus to focus it on those aviation communities where shortages persist.

-- Nuclear officer continuation pay. Retention of our nuclear-trained officers has improved by 10% over the past three years. A 26% shortfall of these highly-trained officers remains, particularly in the mid-grades. This figure will increase to about 33% before those newly entering the submarine community reach the mid-point of their careers. The advent of the accession bonuses paid to officers entering the program has met with great success. This year we have met 100% of our accession goal for the first time. The provision of these pay incentives for nuclear-trained officers must be continued if we are to achieve our goals of manning nuclear ships with adequate numbers of trained, experienced officers.

Materiel Readiness. Next to personnel, materiel readiness has received the highest funding priority of all navy accounts during the last three years. The pragmatic approach to allocating the Department of Defense budget between the first priority readiness, and the other accounts, such as investing in future ships, aircraft and weapons, and from day-to-day operations of the existing force, is best described as "looking for the war stoppers." That is a simple formula for applying common sense.

For instance, it would make little sense to spend all of our funds to achieve a 90-day supply of spare parts for every aircraft carrier as a recent GAO study suggested, while ignoring ammunition and missile shortages that would limit each carrier to a very small fraction of that 90 day endurance in spare parts.

It is just as possible to lose a war by running out of ships, aircraft, ammunition or spare parts. The objective is to see that you do not run out of any one of those commodities before you have terminated a conflict on your terms. So you apply the highest funding priority to those commodities which, when exhausted, will stop the war on unfavorable terms. With 118 ships under construction, we have now accomplished the force level expansion and we must see that funding for materiel readiness is proportionate to that growth in ships and aircraft. We have been able to maintain that proportionality for the last three years, and it is reflected in the FY85 budget. During that period, for instance, we doubled the amount of funding for aircraft spares and procurement. During the past three years the average real annual growth for maintenance has been 6.5%, and for spare parts growth has been 14.7%. These percentages represent a $1.4 billion increase for maintenance and a $900 million increase for spare parts. Additionally, $2.3 billion has been added for the period 1981-88 to correct shortages of spare parts carried on aircraft carriers. The FY85 program will fund sufficient spares to deploy 13 carriers, and by 1990 all 15 carriers will be capable of deploying with 100% of their AVCAL assets.

The percentage of naval aircraft ready on any day to meet the mission has risen in three short years from 59.2% in 1981 to an all-time record high in 1983 of 69.2%, the highest since the Navy Department has kept such records.

Combat readiness rating for aircraft squadrons, a wartime readiness measure, has risen 24.2% over this same period. The combat readiness rating of all types of surface ships has risen 14%.

The chronic problem of long backlogs of ships and aircraft awaiting overhaul will be effectively eliminated if FY85 readiness requests are appropriated by Congress.

FY85 funding for flying hours represents a 3% increase over the FY84 level which will provide 25 flying hours per month per air crew.

Ship steaming days are funded at the same rate as in FY84 adjusted upward for the larger size of the fleet. This figure is based on the required steaming days to maintain readiness and training and does not include additional funding for unforeseen crises. It is essential, therefore, that the supplemental to restore funding for operations in Grenada and the Eastern Mediterranean be acted upon swiftly, otherwise there will be degradation in the readiness and training of the fleet as we are forced to rob Peter to pay Paul.

Ammunition. During the 70's, ammunition, missile, and torpedo stocks declined to such an extent that three years ago we could not load out the fleet even once. Funding for ordnance has doubled over the last three years and is doubled again in the FY85 program between FY85 and FY87. The significant cost effectiveness that we have gained by the increased production levels has brought substantial reductions in unit costs of ammunition and missiles. By 1987 we will have doubled the number of days of combat sustainability in the force. The FY85 request reflects a 21% growth in funding over FY84, and full-funding is essential if we are to maintain the efficiency of the buy at the production rates and price decreases that have been achieved. We expect to achieve our full objective for war-time sustainability by 1989.

FY-85 Navy Shipbuilding Program.

The FY85 Navy budget requests 23 new construction ships, 6 conversion and reactivations. We are now dealing increasingly with modernization rather than force building in our shipbuilding program.

Aircraft Carriers. There are no aircraft carriers in the FY85 budget or five-year projection, and no new construction carriers are needed until the early 90's. CARL VINSON has completed its first operational deployment as the 13th aircraft carrier, THEODORE ROOSEVELT (CVN-71) will be launched in October of this year and will become the 14th deployable carrier in 1986. ABRAHAM LINCOLN (CVN -72) will join the fleet in 1989 as the 15th deployable carrier and GEORGE WASHINGTON (CVN-73) will replace CORAL SEA in 1991.

Battleships. The FY84 budget contained long-lead funding for the reactivation of the 3rd battleship MISSOURI. Long-lead funding for WISCONSIN, the fourth battleship, will be contained in subsequent budgets.

Trident Submarine. The FY85 budget contains funding for the 12th Trident which will be a D-5, Trident II missile configuration. Attack Submarines. The FY85 budget contains funding for four Los Angeles class nuclear attack submarines. It is essential now that we have both Electric Boat and Newport News producing Los Angeles class submarines with great efficiency, that we take advantage of their capacity to produce the numbers required at substantial savings.

The budget contains funding for research and development of systems required for a new class of attack submarines currently planned for lead ship funding in FY1989. We are confident that technological advances now make it prudent to move to begin construction at that time of a new class of attack submarine. The Soviets are narrowing the gap in submarine technology and we must maintain our technological edge. They currently are building submarines at several times our own building rate and currently outnumber us in attack submarines by a factor of three. They exceed our numbers of nuclear attack submarines by more than 10%.

AEGIS Cruisers. The FY85 budget contains funding for three AEGIS cruisers, the 14th, 15th and 16th of the class. The FY84 appropriation for three cruisers was awarded competitively for the first time with Bath Iron Works winning one ship and LITTON winning two. That annual competition will be continued through completion of the program.

Destroyer. The FY85 budget contains full funding for the lead ship of the Arleigh Burke class destroyer. This ship will replace existing DDG-2 and DDG-37 class destroyers on a one-for-one basis. Its capability will be midway between the FFG-7 class frigate and CG-47 class AEGIS cruiser. The lead ship price is capped at $1.1 billion (FY83 dollars) and the average price of the sixth through tenth ship is capped at $700 million.

Amphibious Ships and Landing Craft. Three years ago we embarked on a program to expand our Marine amphibious lift capability to add one Marine amphibious brigade, and that program is on schedule. The new ships under construction and design will incorporate the new generations of Marine Corps equipment such as the CH-53E heavy assault helicopter, the JVX advance vertical lift aircraft, heavier artillery pieces and new ground vehicles, the high-speed landing craft air cushion, LCAC, and the AV-8B Harrier. The FY85 budget contains two LSD-41 Whidbey Island class ships, the 5th and 6th.

Mine Counter Measures Ships. Construction began last year on the first of the Navy's new Avenger Class (MCM-1) mine counter measure ships. A total of five of these ships, designed to hunt and neutralize advanced Soviet mines requiring sophisticated means for neutralization, have been approved through FY84. Nine more are planned for a total of 14 and 4 are included in the FY85 budget.

A smaller, less expensive mine counter measure ship, the MSH-1 was authorized by Congress in FY84. This ship is designed for harbor mine clearance and coastal operations rather than deep water ocean countermeasures operations as is the MCM-1 class. We plan to procure a total of 17 of these ships.

Support Ships.

In FY85 we are requesting three civilian manned fleet oilers (TAO). These ships keep Battle Group Support ships (AOE/ AOR) and other ships supplied with fuel. We plan 11 new TAOs for FY86-89. Beginning in FY86, we will procure additional multiproduct ships for battlegroup operations. Three AOEs and four AEs are planned for FY86-89, to align the number of fast replenishment ships with the number of aircraft carriers. To alleviate the projected shortfall in surface fleet tenders in the late 1980s, we will request funds for one AR in FY89.

Sealift and Maritime Positioning. The budget submitted two years ago contained provision for an increase in the Navy's ready reserve fleet from 32 to 77 ships, including 16 tankers, by 1988. 31 cargo ships and 1 tanker have already been upgraded to make them available for military use within 5 to 10 days of notification. This ready reserve fleet, under the management of the U.S. Maritime Administration, can be used for contingencies requiring sealift and will augment those ships of the Military Sealift Command already in service.

For fast sea lift purposes, eight SL-7 high speed (32 knot) container ships were acquired by the Navy beginning in FY82. The conversion of all eight SL-7 container ships to a roll-on roll-off configuration has been authorized and all eight will be operational in that configuration by FY86.

An innovative program to convert U.S. flag ships to military use by installing "sea sheds" and "flat racks" to commercial containerized shipping is paying large dividends in improving our military sealift capability. The program to acquire up to 11 auxiliary crane ships (TACS) will also improve our ability to off-load ships to barges in ports where modern cargo handling facilities do not exist.

With regard to southwest Asia prepositioning, our Near-Term Preposition Force (NTPF) of 18 ships already provides equipment, fuel, supplies and medical equipment for an entire Marine amphibious brigade plus Army and

Air Force requirements in the Indian Ocean and Mediterranean. Our program to replace these ships with 13 Maritime Preposition Ships (T-AKX) capable of providing the equipment and supplies necessary for three MABS for deployment anywhere in the world is ahead of schedule, with the last of these ships expected to deliver in 1986.

The Naval Recovery Budget from FY81 through FY85 has contained more money for mobility for our forces by sea than navy budgets have contained in all the years since World War II put together.

Aircraft Programs.

The FY-85 budget includes funding for the acquisition of fixed and rotary wing aircraft to support a total of 5701 active inventory aircraft and reserve aircraft. Roughly a third of these aircraft are operated by the Marine Corps. The 13th active airwing is being commissioned this year and a 14th is planned for FY87. The airwing dedicated to our 15th deployable carrier will be one of the two reserve airwings. The second reserve airwing will be dedicated to the aircraft carrier undergoing service life extension. Based ashore are 24 active and 13 reserve squadrons of P-3 patrol aircraft.

The Marine Corps contains three active carrier capable aircraft wings and one in the reserves. A Marine aircraft wing typically contains four fighter/attack squadrons, three light-attack squadrons and one all-weather medium attack squadron. Other elements include fixed wing and helicopter aircraft for electronic warfare, reconnaissance, aerial refueling, transport of logistics and troops, airborne assault, aerial observation missions and command and tactical air control.

The total five year procurement program envisions the acquisition of 881 fighter and attack aircraft, plus 60 combat support aircraft. This program will modernize our sea-based and Marine Corps Tactical Air Forces as well as provide replacement aircraft for those lost through normal attrition, and provide sufficient growth to meet our airwing expansion plans of the decade.

Tactical Aircraft Modernization. In the FY85 budget, the Navy Department is embarking on a dramatic new modernization policy. a major policy decision has been made to forego the development of an entirely new fighter and attack aircraft and instead to upgrade existing aircraft in production. This decision results in a savings of at least $4 billion over the remainder of this decade. A major objective of the program is to establish hardware and software commonality in our four major tactical aircraft programs with the objective of obtaining 90% commonality in avionics and electronic systems for the AV-8B, F/A-18, A-6, and F-14.

F-14 Tomcat Fighter. The F-14 all weather day/night fighter is our primary fleet air defense fighter intended to provide air superiority wherever deployed including the highest threat environments of Soviet long-range bomber, fighter and cruise missile attack. The F-14 is unique in the world in having the long range surveillance and attack capability of the AWG-9 PHOENIX radar and missile system. The FY85 budget includes funding for a stable production rate of 24 F-14s through FY86. It includes funding also to shift production aircraft from the TF-30 engine to the F110 engine. The budget also contains funding for the avionics upgrade program outlined above designed to increase capability, jamming resistance and maintainability, reliability, and survivability. First production of the upgraded F-14D is planned for FY-88.

F/A-18 Hornet Strike Fighter. This unique dual mission-capable aircraft adds a new dimension of flexibility to Navy and Marine Corps aviation. Not designed to have the ranges of medium attack aircraft, it nevertheless has excellent performance in the attack mission. Moreover, fleet experience indicates that it is now the most capable air-to-air maneuvering aircraft in the world. It is currently breaking all records for reliability and maintainability, requiring a small fraction of the maintenance hours per flight hour of the F-4 and A-7 aircraft that it replaces.

A-6E/F. The A-6E night, all-weather medium attack aircraft is the best all weather precision bomber in the world. Recent evaluations and analysis of alternative airwing mixes indicates that the future requirement for these aircraft is substantially higher than our current inventory. Funding is required in FY85 to carry out the upgrade program outlined above. For the all-weather attack mission, current performance of the aircraft is sufficient. But to stay abreast of the growing threat environment, a major upgrade of the avionics and weapons systems will be undertaken. This upgrade will seek to achieve the same maintainability, survivability, reliability, and commonality with the F/A-18, AV-8B, and F-14D. Competition is planned for selection of an off-the-shelf multi-mode highresolution attack radar with air-to-air capability as well. Competition is planned also to replace the current J-52P8 engine with a more efficient off-the-shelf modern technology engine.

AV-8B. AV-8B has successfully completed its Phase I OPEVAL. This enabled us to sign a FY83 firm, fixed price contract with a FY84 option price not-to-exceed the FY83 fixed price. The FY85 budget includes funding for 32 aircraft.

CH-53E. Funding is requested for ten CH-53E heavy lift helicopters. Introduction of this aircraft has been highly successful.

SH-60. The SH-60 LAMPS-III helicopter is now in production. The FY85 budget contains funding for 18 aircraft based on an effort to stabilize production at a cost-effective two per month on a firm, fixed price basis.

SH-2F LAMPS-I Helicopter. The FY85 budget contains funding for six LAMPS-I helicopters which provide a valuable capability to those modern ships that will not be modified to operate LAMPS-III helicopters, primarily the FF-1052 class and early flights of the FFG-7 class. After being closed for ten years, the reopening of this production line has been quite successful and they are now being produced ahead of schedule and under cost.

AH-1T. The FY85 budget contains funding for 22 AH-1T attack helicopters. This tried and true aircraft is one of the most versatile in the Marine Corps inventory. An option to include the T700 engine is currently being evaluated.

CV Helicopter. The FY85 budget contains funding for a replacement helicopter for the SH-3 carrier based dipping sonar anti-submarine warfare helicopter. This mission embodies both CV search and rescue requirements and the dipping sonar requirement which is becoming more important in dealing with the torpedo threat posed by Soviet and other submarine forces. The CV helo, in effect, is a battlegroup's close-in point defense system against submarines.

JVX. The FY85 budget contains funding for the JVX program, now shifted entirely to the Department of the Navy budget. One of the most innovative and exciting new aircraft development programs in the world, JVX will replace the aging medium assault CH-46Es and CH-53A/Ds in the Navy and Marine Corps inventory. In addition, this unique hybrid VSTOL aircraft is sure to be applied to many other applications in all of the Services. We are planning from the inception of this program to establish two production lines to compete annual production each year.

Marine Corps Procurement Program

The Marine Corps Procurement Program request for FY85 totals $1,979 million and provides for continuation of readiness enhancement by the introduction of new initiatives and the acquisition of new weapons systems for fire power intensive battalions. Infantry battalions will be equipped with the new personal defense weapon, improved M-16A2, rifle squad automatic weapon, shoulder-launched multi-purpose assault weapon, and the MK 19 40mm machine gun. The Light Armored Vehicle (LAV) will add a new degree of depth and versatility. The high mobility, multi-purpose wheeled vehicles, and the new logistics vehicles system are also adding significant mobility improvements. The Marine Corps anti-armor capability will be improved by increasing the number and capability of both the TOW and the DRAGON missiles. Procurement of the M-198 155mm towed howitzer has significantly increased the range and lethality of artillery, and procurement of further 155mm self-propelled artillery is proceeding. Many command, control and communications systems are currently in production or in the final stages of development. Position Location and Reporting System (PLRS), Marine Integrated Fire and Air Support System (MIFASS), and Tactical Air Operations Center 85 (TAOC-85), are some of the command and control systems for tomorrow's battlefield. Existing equipment capabilities have been improved by service life extension and modification programs to the LVT-7 Amphibious Vehicle, the Hawk missile, and the 5-ton truck. The balance of the Marine Corps procurement goes largely to improving ammunitions stocks, and munitions for training.

Research, Development, Test and Evaluation

The $9.8 billion request in FY85 for RDT&E represents 10% of the Navy's total request. While this RDT&E request represents 24% real program growth from the FY84 level, it should be noted that there are significant high-priority programs which are being funded in full-scale development which account for the increase. There has been a major improvement in efficiency reflected in this RDT&E budget. We have reduced the total number of RDT&E programs from 532 three years ago to 421 this year.

Two of the areas that have shown significant growth are strategic programs and tactical systems. The $618 million growth in the TRIDENT II strategic missile program is necessary to maintain the FY89 IOC. Several tactical programs are now at the stage of major development. These include the DDG-51 destroyer, the new design SSN, the F-14 and A-6 improvement programs, and the JVX aircraft. Several other systems are now in full-scale development. Of particular significance are the Submarine Advance Combat System (SUBACS) slated for the submarines authorized in FY83, the MK-50 Advanced Light Weight Torpedo and the Joint Tactical Information Distribution System (JTIDS).

Space. With three quarters of the earth's surface covered by the seas, the Navy has always had a priority interest in the maritime dimension of space. Naval operations are increasingly dependent on space systems strategically, tactically, and in peacetime. Nearly 85% of all operational satellite system outputs provided to the armed forces are principally for Navy use. The coordination of military service and civilian agency activities in space has been remarkably smooth and successful. The principal responsibility for coordination of Defense Department activities in space has traditionally been the responsibility of the Under Secretary of the Air Force. That policy has worked extremely well, with virtually no duplication of effort, complete sharing of information, and the most efficient allocation of resources.

Navy and Marine Corps Reserve

Three years ago the Department of the Navy undertook a major reorganization of components to move from a vertical to a horizontal relationship with the active forces. That means essentially that the reserves must provide immediate augmentation to the active force in time of emergency across the entire spectrum of warfare. To implement that common sense policy requires providing the reserves with equipment compatible with the active forces. For instance, instead of providing the reserves only such equipment as it becomes obsolete and removed from the active force, there should be a parallel spectrum of new and old equipment reflected in the reserves in the same proportion as in the active force. In practice, we have taken fundamental steps to bring this about.

-- Modern FF-1052 and FFG-7 frigates have been transferred to the Naval Reserve Force with a total program planned at 26 frigates.

-- The first reserve light attack squadron is now transitioning to F/A-18s, with at least three more to follow.

-- Modern A-7E, E-2C, F-14A and SH-2F aircraft are being transferred to reserve units this year, with other fleet aircraft to follow during the subsequent five-year plan. -- Squadron augmentation flying units have been created with each active duty airwing providing current trained aviators and maintenance personnel for immediate augmentation to active duty squadrons.

The Naval Reserve contains several components which only exist in the reserves: 100% of the Navy's U.S. based logistic airlift; 100% of light attack helicopter squadrons; 100% of our combat helicopter search and rescue capability; and 100% of Naval mobile inshore undersea warfare units -- the "brown water navy" structured for combat on inland waterways. Upon mobilization the reserves provide: 99% of the naval control of shipping organization crucial to merchant ship mobilization and convoy formation for overseas operations; 86% of ocean-going mine sweepers; 86% of cargo handling battalions vital to port management and loading operations in a combat theater; 80% of the Military Sealift Command military personnel; 68% of navy mobile construction battalions, the famed Seabees; 66% of special boat forces; 37% of naval intelligence personnel; 35% of maritime anti-submarine warfare patrol squadrons; 30% of medical support personnel; 22% of ASW helicopter squadrons needed for fleet and convoy anti-submarine defense efforts; 14% of our tactical sea-based aviation capability; 9% of naval base operating support personnel.

The Marine Corps relies heavily on a fully trained and capable reserve component to complement its active force. The Marine Corps division/wing team (the Fourth Marine Division/Aircraft Wing Team) comprises 1/4 of our total Marine Corps combat structure and 1/3 of total Marine manpower assets. The Reserves provide 40% of Marine tanks, 33% of the heavy artillery, 30% of the light attack aircraft, and 33% of the anti-aircraft missile capability.

It is not often realized how fully integrated our Navy and Marine Corps reserves are becoming in our active force structure and peacetime operations. A Naval reserve C-9 transport aircraft on a scheduled logistics flight to Beirut at the time of the terrorist attack last October made several trips evacuating wounded servicemen to hospitals in Italy and Germany. Four other reserve C-9s provided direct support to our operations in Grenada during the same period.

The Marine Corps recently received delivery of the first new aircraft ever delivered to a Marine reserve squadron when four new KC-130T aircraft arrived at Naval Air Station, Glennview, Illinois. These aircraft will answer active duty as well as reserve training requirements.

Three minesweepers deployed to the Mediterranean for a four-month period were commanded by reserve officers. Reserve helicopters participated in exercise Bright Star in Oman in 1983 and three reserve medical teams took part in exercise AHUAS TARA II in Honduras. Reserve P-3 squadrons performed 581 active operational missions in the Atlantic and Pacific in 1983.

83,000 manhours of direct support to ship overhaul and rework projects were contributed by reserve Ship Intermediate Maintenance Facilities (SIMA). Reserve Seabees devoted 35,000 man-days to rehabilitating navy base facilities. The Navy surface reserve components contributed 58,000 man-days to fleet exercise support, and reserve security group personnel provided 36,000 man-days in direct support to the national intelligence community. Over 1/3 of all naval intelligence processed for day-to-day fleet support is produced by naval reserve personnel. The Marine Corps reserve experienced a 30% increase in the number of reservists participating in major exercises in FY83, and Marine reserve combat readiness increased by 12% to a record high of 93%.

The Navy's Ready Reserve structure numbers 250,000 personnel of which 97,185 are selected reservists in a pay drill status. This latter figure will grow to 124,200 by the end of FY85.

The selected Marine Corps reserve grew to 42,690 in FY83, and 46,447 are programmed in FY85.

A most important new initiative begun last year was the Sea/Air Mariner Program which will provide 10,000 first-term enlistments directly into the Naval Reserve. We expect to begin a similar program this year for junior officer accession directly into the reserves.

As we proceed in this horizontal reorganization and integration of our reserve forces, we are exploring additional missions and roles for reserve participation. We are currently exploring the possibility of the creation of a Reserve Caribbean Defense Force, specifically trained for Caribbean contingencies. In FY85 we begin implementation of a new reserve mine sweeping program known as the Craft of Opportunity Program. The concept involves, in peacetime, civilian craft that would be best suited for use as mine countermeasures craft upon mobilization with a minimun of alterations. A number of craft will be procured as trainers in peacetime to train the crews needed for mobilization. In peacetime these units would conduct badly needed harbor surveys.

In summary, we are rapidly expanding the immediate role that reserves will play upon mobilization. It must be kept in mind, however, that the heavy schedule of peacetime forward deployments that requires all of our ships to be away from home port nearly 50% of every year and to deploy on 6-month forward deployments cannot be manned by reservists in peacetime. This is a fundamental difference between land-based forces and sea-deploying forces that must be understood when considering reserve/active force ratios between land and sea services.

Conclusion.

The fleet and the fleet Marine force today are more ready to go in harm's way than in any time in peacetime history. Congress should take much pride in the accomplishments of the Naval Recovery Program that began three years ago and has already made such a dramatic change in the global maritime balance. No longer do we have a 1 1/2 ocean Navy for a three ocean commitment; no longer do we have ships that cannot deploy on time for lack of trained sailors; no longer do we have a hemorrhage of talent from our career forces; no longer do we have an unending spiral of cost overruns and escalation; no longer does the world perceive the United States as a declining naval power. The defense increases voted over the last three years have paid enormous dividends. The President, the Secretary of Defense, and the Department of the Navy have not waivered in three years in the priorities and the commitments that were made originally to achieve maritime superiority. We have every confidence that Congress will demonstrate the same constancy of purpose.

SUMMARY STATEMENT OF ADM. JAMES D. WATKINS

CHIEF OF NAVAL OPERATIONS

Mr. Chairman, it is my pleasure to appear before this committee today to present an overview of our budget request for FY 1985. I appreciate this opportunity to explain how our budget continues the balanced program approach which the President initiated three years ago in order to maintain a high state of readiness while gaining ground in force levels.

Events of the past year prove two things: our Navy must be prepared to fight now and maritime strength remains a priority national objective. I have dedicated the first 30 pages of my posture statement to a detailed explanation of how naval strategy is fully integrated with national security policy. Our budget request and associated five year plan represent our best judgement, as the responsible authority, of the minimum requirements to carry out those objectives. These requirements take full account of the contributions of our reserves, our allies and the mutual support of our sister services. They reflect increased emphasis on developing innovative strategies and tactics to maximize our present capabilities and achieve economy of force.

The Navy's FY 1985 budget is not an abstract exercise in balanced funding, as some critics would suggest. It represents a careful application of resources among the four pillars of readiness, sustainability, modernization and force structure. It is an extension of the balanced program growth which has been supported by the Congress in the past and from which we are realizing sizable benefits. We now enjoy the highest levels of readiness that I have seen in almost thirty-five years of naval service. The esprit and professional competence of our personnel impress all who have the opportunity to observe them, including many of you and your fellow members. Our newest ships, aircraft and combat systems now entering the fleet represent quantum leaps in warfighting capability. I hope you share my pride in this dramatic evidence of improvement, which has been made possible by your strong support.

We are requesting $92.4 billion in total obligational authority for FY 1985. This request is inflated by $4 billion for retired pay accrual, which we were required to include in our budget request for the first time. The preponderance of funds is allocated to readiness and sustainability as shown in Figure 1. Last year 56% of our budget went into these areas. This year 58% goes into these accounts as we continue to emphasize our near term warfighting capability. Only 22% is slated to procure the ships and aircraft which will constitute future force levels.

I fully recognize the number of competing priorities in the FY 1985 budget and strongly support the need for fiscal prudence. On the other hand, strong maritime forces are essential to the future of this Nation and I am obligated to state to you Navy requirements. Our budget is an accurate reflection of what we need. Reductions in our program request increase the risk of our Navy's ability to carry out missions in support of national security objectives.

I intend to continue improving our present state of readiness in FY 1985 as my top priority. As of January, combat readiness ratings, which measure the level of personnel manning, training, support and material condition, have risen 13.4% for ships and 33.2% for aircraft squadrons since 1980. To sustain this

Figure 1
NAVY TOA (FY 1985 Constant Dollars)

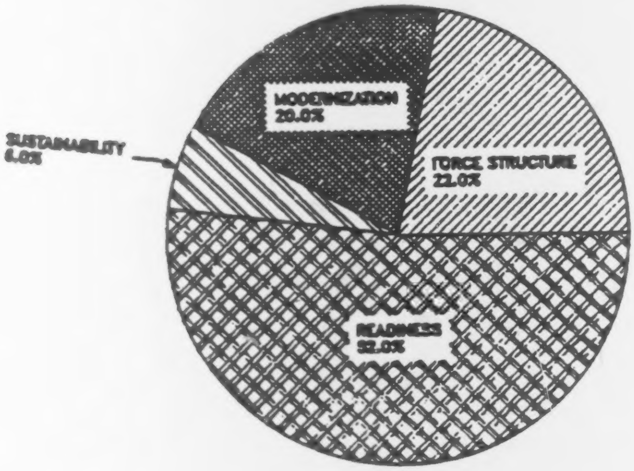
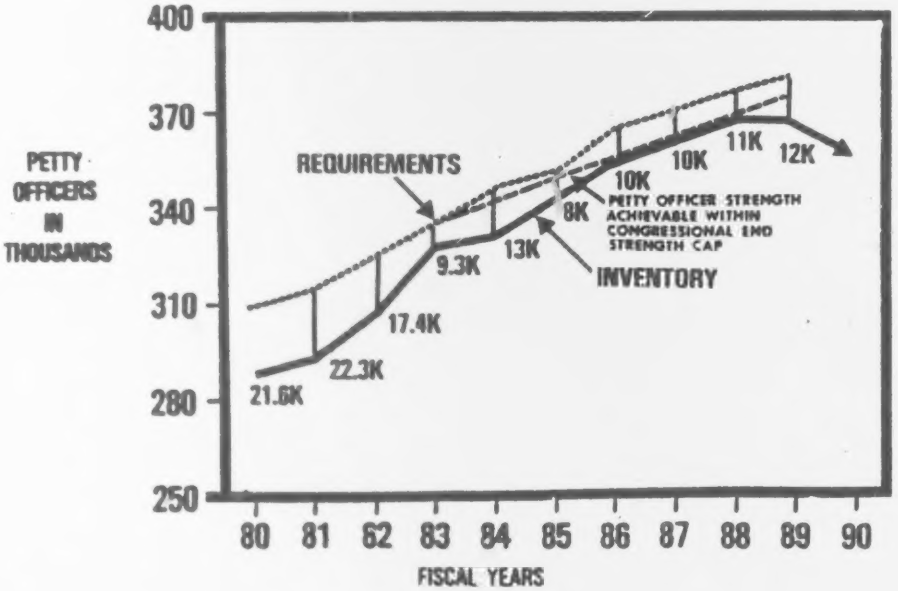


Figure 2
PETTY OFFICERS FOR THE 600 SHIP NAVY
(E-4 thru E-9)
Declining manpower pool requires emphasis on retention
Retention = National Support + Competitive Pay



progress, over half of our budget request for FY 1985 will provide resources to this area.

The key to readiness is trained, experienced personnel. Our request for an end strength increase of 10,500 in FY 1985 provides for new ships and squadrons coming on line, improves the manning levels in present fleet units and provides for an increase of 2,000 medical personnel as the first increment to improve medical care for Navy and Marine Corps personnel. Failure for a second consecutive year to sustain the end strength proposed in our budget will force manning levels down immediately and acute petty officer shortages about four years downstream, a repeat of the 1970's. Note that in Figure 2 the inventory of experienced petty officers will turn down rapidly in the out-years were the Congress to perpetuate last year's cap on military end strength, even assuming continued high career retention. This is so since under caps the ships and squadrons are there but the sailors have not been allowed to enter the Navy and grow into petty officers. I urge you to allow our manpower request to stand undiminished this year and not mortgage future readiness any further. In addition, our ability to attract and retain high quality personnel in an increasingly healthy, expanding economy is yet to be tested in this decade of declining youth in the work force and now declining unemployment. This is of serious concern to me and I urge you to help us maintain a competitive compensation and benefits package to sustain recruiting and retention vital to manning our expanding Navy.

Important to our efforts to maintain material progress is approval of the FY 1984 supplemental request which restores funds for crucial items in readiness accounts, including spare parts and material support which we redirected to cover unbudgeted contingencies in Grenada and Lebanon. In FY 1985 we intend to increase aircraft readiness to 70% mission capable from 66% in FY 1983. We also intend to reduce the backlog of ships overdue for overhaul to 2 ships. The FY 1985 flying program reflects a return to a level required to support thirteen deployable airwings, while at the same time providing achievable primary mission readiness increases for Marine Corps squadrons.

Sustainability, the staying power of force, is at the core of our maritime strategy and is crucial to our effectiveness across the full range of potential conflict scenarios. Sustainability components of our budget have increased by 11% annually between FY 1981 and FY 1985, and provided significant, measurable improvements. It includes funds for procurement, for mobilization and wartime operations, and for war reserve stockage such as equipment, repair parts, ammunition and fuel.

Despite application of significant resources over the last three years, and the fact our bins are beginning to fill, ordnance shortages in almost every major weapon category continue to be a serious problem. This resulted from a former national strategy which achieved false budgetary reductions by unrealistically reducing the expected duration of hostilities. This budget is structured to continue recovery from shortfalls and imbalances I described to you last year. We are accelerating the procurement of SPARROW, SIDEWINDER, and PHOENIX missiles, as well as the latest version of the MK 46 torpedo. Our WPN request has increased in real terms by about 17% over FY 1984.

Despite our efforts to improve our ordnance posture, crossdecking of some categories of weapons to complete loadouts for our deployed forces is still necessary. This problem is due in part to the approximately two-year delay between funding and delivery of completed weapons. With continued Congressional support, cross decking will be a thing of the past by the end of the decade.

We have brought about a dramatic expansion of our naval reserve capabilities as part of our effort to improve sustainability. We have instituted a program for horizontal integration of our F/A-18 HORNET, F-14 TOMCAT and FFG 7 Oliver Hazard Perry Frigate. In addition, by including FF-1052 Knox Class Frigate, A-7E Corsair, E-2C HAWKEYE, and the modification of P-3 aircraft, we continue to keep our reserve forces compatible with first line active equipments. As a result of the Congressionally approved program for FY 1984, our reserve force end strength will increase by almost 12% as opposed to only a 2% growth for regular forces.

Our R&D efforts are intended to stay ahead of the projected threat and to take advantage of future breakthroughs in technology so that our forces are modernized to keep pace with our potential opponents. We have requested $9.8 billion for R&D in FY 1985, about 10% of Navy TOA, for programs such as TRIDENT II, MK-50 ALWT, NEW DESIGN SSN, and F-14D. The technological lead which the U.S. now enjoys over the threat is a product of R&D budgets in the 1960's and 1970's which approximated 10% of total Navy funding. Our experience shows that when we fail to allocate about 10% of our annual budget to R&D we are mortgaging the future. We must ensure these levels are maintained for the remainder of the 1980's if we are to maintain our edge in the technological competition.

Improved management of scarce R&D funds is an area where we have made major progress: new starts in R&D in the last four years have been cut in half and the number of active R&D projects has been reduced from 521 to 421.

Resources for force level growth represent 22% of our FY 1985 request. The FY 1985 SCN request of $13.14 billion provides for 23 new construction ships and 6 conversion/reactivations. This represents real program growth of 9.1% and provides 7 more new construction ships over FY 1984. The plan provides measured and diversified progress towards a balanced 600 ship Navy, including Amphibious Lift, Mobile Logistic Support Forces, surface combatants and attack submarines. Funds are also included for reactivation of MISSOURI and introduction of the third aircraft carrier, USS INDEPENDENCE, into the Service Life Extension Program.

We included funds for the first of 29 DDG 51 Class ships urgently needed to replace 33 ships of the DDG 2 and DDG 37 Classes which were delivered in the early 1960's and face the end of their 30 year service life in the early 1990's. We must begin DDG 51 now, in 1985, to build the modern surface ships we need to conduct offensive and defensive missions against the modern threat we face at sea even today. The DDG 51 is a fast, tough ship, highly survivable at sea and has great depth and flexibility in warfighting capability. She complements the AAW capability of CG 47 and the ASW capability of DD 963, while her cruise missile suite supplements the surface and land attack capability of CV strike aircraft. DDG 51's fall midway between modern frigates and cruisers in terms of follow-ship costs and are affordable in the numbers required.

The Soviet submarine building program is producing a diversity of fast, quiet, deep diving submarines and our technical competence is being challenged to advance apace. To do so, we are requesting four modernized SSN 688 Class submarines to meet our near and mid-term attack submarine needs. We are initiating a program for the next generation SSN now to counter the Soviet submarine threat of the future.

Our five year SCN plan is both realistic and affordable in all years. We have reduced last year's planned SCN request for the common fiscal years 1985-1988 by over $17.6 billion through the application of cost savings resulting from increased competition, fixed price contracts and lower levels of inflation. Additionally, for the first time in four years there are no funds requested for cost growth in prior year programs. Utilizing only 14% of TOA, our plan provides a well balanced combination of 121 new ships and 21 conversions and achieves and sustains our force objective of 600 ships by the end of 1989.

Our aircraft procurement plans provide sufficient aircraft to support stand up of the 14th carrier air wing in FY 1987 and continued modernization of both active and reserve Navy and Marine squadrons. Our FY 1985 aircraft procurement request is $11.5 Billion for 287 new aircraft and related support. This is a 6.5% increase in real terms over our FY 1984 procurement and represents an increase of 55 aircraft. Our FY 1985 plan includes 84 F/A-18 Hornets and a diversity of other aircraft.

Over our five year procurement plan we intend to reduce the number of aircraft procurement lines from 16 in FY 1985 to 11 in FY 1989 leading to increased economy of scale in production and reduced support requirements. The CH/MH-53 program is a multi-year procurement candidate in FY 1985 with an estimated savings of $129.3M.

Our budget request is rational, executable and embodies a sense of stewardship. In that context, I will mention a few of our management initiatives and highlight what we are already beginning to see as the measurable benefits of these initiatives. In an all-out effort to eliminate pricing abuses in spare parts procurement, we initiated a special project termed BOSS -- Buy Our Spares Smart. BOSS is working. Among its over 100 initiatives to date are, for example, the purchase of spares from the manufacturer rather than through prime contractors, paying only "should-cost" value of spares, and encouraging reports to proper authorities when prices appear unreasonable.

By using a flag officer Competition Advocate General, we have increased competitive procurements resulting in savings of over $500 million on eleven FY 1984 contracts totaling $5.9 billion. He has caused increasing numbers of contractors to provide, without charge, data previously asserted "proprietary". The result is broadened competition for spare parts at substantial cost savings.

The use of warranties in the Navy requires comment due to the recent legislation which establishes the requirement that all defense contractors warrant their products. The Navy has always used defect and warranty clauses when it was determined that it was cost effective. We have a large number of warranties in effect reflecting a variety of systems, equipments and replacement parts. Examples of current warranties on major procurements include engine components in the TF-30 Engine for the F-14 and guidance components in the HARPOON antiship missile. Defect clauses are written in the majority of our weapon systems acquisition projects. Recent examples are the SSN 688, and the FFG 7 class frigate. The use of warranties and defect clauses are decisions left to the individual acquisition manager and depend on factors such as risk of product failure, the cost of the warranty and the impact of readiness when the item would not be repaired in the field. We applaud the increased emphasis on warranties and will continue to use them.

The President's Private Sector Survey on Cost Control, or Grace Commission Report, provided guidance on areas in which we can achieve better management efficiencies. We accept and encourage positive, constructive criticism aimed at improving our management of scarce resources. I am pleased to say that in most instances, we had already recognized the need for improvements and initiatives were underway to correct the problems cited in the Grace Report.

In summary, the objectives of our naval recovery program are in sight, and I believe it is imperative to maintain our forward momentum. World events of the last year are irrefutable evidence that our country needs a strong Navy. In light of these past events, and to meet future commitments, our budget request is prudent. The men and women of our Navy have demonstrated through their outstanding performance and continuing sacrifice that they are worthy of the strongest support of the American people. I urge your favorable consideration as you and your colleagues deliberate this FY 1985 appropriation.

PREPARED STATEMENT OF ADM. JAMES D. WATKINS

CHIEF OF NAVAL OPERATIONS

Mr. Chairman and distinguished members of the committee, I am very grateful for the opportunity to appear before you again to report on the state of the U.S. Navy. By way of introduction, I will highlight a few items important to our Navy and to this year's discussion of the distribution of resources to provide for a strong and vital maritime posture.

As the new year began there were more than 30 separate armed conflicts ongoing around the globe. Furthermore, untold numbers of brutal and destructive terrorist incidents -- including state sponsored terrorism -- have occurred recently and are likely to continue. We are not a nation at war, but American soldiers, sailors, airmen and marines have fallen in combat over the past year defending their country's interests. Peace, crisis, conflict: often in today's world there are no clear demarcations. The Navy must be prepared to act any day, every day, along the entire spectrum of conflict potential -- to ensure national security while limiting crisis, controlling escalation or terminating conflict.

Around the world -- in Lebanon, Central America, Chad, Grenada, and the airspace off Soviet Sakhalin Island -- we have faced the various threats to world peace and have responded as a nation. In each of these critical situations, U.S. military forces responded to National Command Authority tasking with speed and efficiency. The Navy on numerous occasions demonstrated its unique capability to support national security objectives. As global, blue water forces with staying power and visible fighting potential, forward deployed Navy and Marine Corps units played decisive roles in pursuit of the military objectives directed by the President to contain each crisis. In short, the total Navy-Marine Corps team, including Reserve forces, has made the strategic difference.

Congressional support over the past three years and the resulting "across the board" improvements in fleet readiness have enabled us to measure up to the challenge. Flexible operational scheduling has made the most of our assets at sea and avoided past static naval deployment patterns. Of course, the totally professional and thoroughly dedicated men and women who serve in today's Navy are key to the Navy's ability to meet our commitments. Throughout the year our people have responded positively and enthusiastically to each new requirement generated by the turbulent international scene. Last year I reported that eight of our thirteen carriers were at sea in support of national policy -- today, we remain a Navy on the move around the world, obtaining maximum use of our forces.

Before I describe the Navy today and explain in some detail our budget submission, I want to review with you the Navy's key role in supporting national policy. The Navy demonstrates national will in peacetime; we respond rapidly anywhere on the globe to control crisis; we are a central element in deterring and, if necessary, defeating wartime threats to our national security.

Nature of the Challenge

United States national security policy fundamentally aims to preserve our freedom with institutions and values intact. We are a global power with global interests and obligations and the world we live in has not eschewed the use of force. We must be able to deal with a wide range of threats to our freedom. It is also clear that the Soviet Union poses the greatest challenge to the United States and its allies --its goals and policies are major threats to world peace.

Since the establishment of the Soviet state, the Soviet perception of their relationship with the western world, including the United States, has been one of long-term conflict. This view reflects the Marxist-Leninist belief that history is a class struggle which, on the international scene, is expressed in continuing conflict between two contradictory systems -- capitalism and socialism.

It does not matter whether or not we want to participate in this long term competition. The Soviets insist on struggling with us, and we must compete. As Soviet confidence and power have increased, so has Soviet global pressure.

Our options are limited. We have gone through a period of accommodation in the hope that the Soviets would moderate the terms of the competition and their goal of dominance. American leaders have rejected any option whereby we would strive for military dominance and some undefinable victory. The best choice in this imperfect world is to remain competitive over the long term, maintaining our strength to deter aggression and contain conflicts at the lowest possible level. This course offers the only hope for long term stability and the possibility that the Soviets will alter their goals. As President Reagan has repeatedly emphasized, the principle of "peace through strength" guides our military planning.

Past attempts to ameliorate the competition by accommodating the USSR have ended in costly failure. The Soviets' response has been to take advantage of our failure to compete, trying to achieve their ends by burying our system of values and our freedom. We have seen ample evidence of this intent from the Soviet buildup of military forces during the period of detente. Soviet actions in Angola, Ethiopia and Afghanistan during the same period offer additional proof.

Now, as we attempt to redress an imbalance of forces -- the result of a unilateral standdown -- we are witnessing a peculiar phenomenon. The Soviets claim that our catch-up efforts threaten the existence of their system, and they oppose our efforts at all costs, describing our corrective measures as the first moves toward war. Our failure to maintain strength during detente only provided the Soviets an opportunity to intimidate the West through a massive propaganda campaign. We must respond with constancy and forebearance and recognize the need to maintain a rough balance of power between the two nations.

Since its creation, the Soviet state has had two goals, the first is to assure the survival of the Soviet state. The second to extend their influence and communism throughout the world. Security has a special meaning for the Soviet Union. The Russian/Soviet state not only has historically been paranoid about the threats it faces, but its ideology also ties the security of the state to the stability of the regime. The U.S.S.R. has concentrated on expanding and consolidating its sphere of control in support of both objectives. As that control is consolidated, the USSR looks forward to further global expansion and an ultimate victory for Soviet Communism.

Soviet strategy requires great power status for the USSR. While Soviet propaganda advertises their economic and social progress over some sixty years, the truth is that the Soviet Union owes its great power status chiefly to military power. Soviet political and diplomatic efforts are influential because they are backed by an expansionist and coercive military threat, one increasingly manifested through naval power. While the U.S. must compete in many areas -- ideological, political, diplomatic, and economic -- we must recognize the Soviet emphasis on military power.

The Soviet regime relies on military power to control its people, to create and hold a buffer of satellite and client states around the homeland, and to match the perceived threat not only from the U.S. and NATO but from other western allies and China as well. Large, general-purpose forces maintain (as in Poland) and expand (as in Afghanistan) the ring of satellite states. The employment of additional forces attempts to extend the Soviet perimeter of influence outward by threatening and coercing smaller nations. Large naval forces extend Soviet influence and potential for sea control and sea denial into areas distant from Soviet coasts. Powerful strategic forces are intended to provide the umbrella of intimidation necessary to permit this Soviet strategy of dominance and coercion to go unchallenged by the West.

Soviet strategy for the spread of the Communist system is designed to create conditions conducive to the acceptance of Communism through Soviet propaganda and the undermining of democratic regimes. Most recently, by the encouragement of terrorism, the Soviets have exploited a new means to eliminate opposition and create instability. Finally, Moscow is adept at co-opting revolutionary movements through military advice and aid, Soviet military presence or the use of surrogate combat forces supported by Soviet military advisors, training and logistics.

Thus, Soviet strategy for both the security of the state and for the spread of Soviet influence and the Communist system throughout the world is based, to a considerable degree, on elements that can be carried out in what we would consider peacetime. To the Soviets, of course, it is not peacetime, but a lower level of conflict at which they would prefer to exploit tensions in pursuit of their goals.

In those few places where the Soviets do not participate actively in fomenting unrest, they profit handsomely from any interests they may coincidently share with the world's terrorist and renegade states, who for their own reasons wish ill for us, our friends and allies. Cuba continues in determined support of a policy to export revolution and subvert Central America and the Caribbean, with effects visible in any day's headlines. Libya plays an equally disturbing role among her neighbors, as does Vietnam. In this vital competition, we have for decades witnessed the value of the U.S. Navy as a counter-weight to the Soviet penchant to trouble the waters and then fish in them.

While the Soviet Union plays a profoundly destabilizing role across the globe, and poses the greatest and most threatening challenges to our security, there are other sources of instability or danger as well. It would be an oversimplification to ascribe all turbulence to the contest between Soviet communism and Western democracy; others among the world's 160 plus states have their own agenda of violence.

National Security Policy

As we face these global challenges, it is crucial to recognize our global interests. A "Fortress America" concept is untenable; if the United States is to continue to exist as we know it today, we are compelled to design a policy which recognizes our worldwide commitments and requirements. We pursue those interests through interactive economic, political, diplomatic and military means along a continuum which includes peace, crisis and conflict.

A new dimension of national security has evolved in the post World War II era. Today, nuclear weapons exist in the arsenals of numerous sovereign nations, including governments dedicated to the very antithesis of democracy and freedom. Wishing away nuclear weapons does not work. There can be no higher priority than to deter nuclear war -- this is the cornerstone of our posture, for without sufficient strategic nuclear deterrence our ability to pursue legitimate national interests in the international arena would become suspect. Strategic submarine forces with their inherent and unique survivability play a key role. The majority of U.S. strategic missile warheads today are at sea on our submarine-based ballistic missile force. Their invulnerability enhances strategic stability and contributes to the potential for arms control. Further, our sea-based tactical nuclear forces provide an important link in the stability of our deterrent posture by denying a potential aggressor any clear advantage through resort to limited nuclear war at sea.

The history of the nuclear era provides convincing evidence that conventional conflicts can and will occur despite the potential for escalation. Moreover, in the real world the international scene cannot always be defined with precision. Even today, we are technically at peace, yet we face crises in widely divergent locations where violence has erupted and is likely to erupt again. The need for limited operations such as Grenada remains a possibility, and the potential for broader conflicts will not soon disappear.

Naval forces underline American commitments and interests around the globe every day; their presence is a physical demonstration of our will. The United States Navy is presently operating off friendly, neutral and hostile shores; it limits conflict and controls crises in tension spots from the Caribbean to the Eastern Mediterranean to the Western Pacific; it asserts and reinforces principles of international law and freedom of the seas on a continuing basis.

As an instrument of foreign policy, seapower is sharp and precise. History provides repeated examples of the efficacy of maritime forces called upon to extend the reach of diplomacy on a global basis. There are many reasons for this. Most importantly, naval forces can be sent to the scene with small political costs compared to other military forces. Additionally, seaborne forces arrive ready to carry out all tasks which might be assigned. They need no major logistic support from overseas bases; they do not require access or overflight rights, and they have staying power. Their inherent mobility and flexibility make them an ideal instrument to blend in varying amounts with other foreign policy tools. Finally, they can be withdrawn easily when the job is done, leaving behind no physical, but strong symbolic reminders of their presence. US naval forces have been the principal tool of eight presidents since World War II in dealing with international incidents which required the use of military forces.

As has been evident in the criser of the past year, many of our friends in the family of nations are not among the rich and powerful, yet they play a major role in maintaining the security of the free world. Security assistance programs enhance the limited capabilities of friendly foreign military forces in a manner compatible with U.S. foreign policy objectives. Congressional support of security assistance, particularly International Military Education and Training (IMET), to strategically located friendly nations adds significantly to preventing crisis development and contributes as well to our overall ability to control and defuse limited conflict should it arise.

While we must deal on a regular basis with crisis and limited conflict, we must also be prepared to respond in the event of a major conventional conflict involving the Soviet Union. Our national military strategy is the framework within which our plans for responding to the Soviet threat are shaped, and that strategy provides the foundation for our maritime strategy.

U.S. Maritime Strategy

National military strategy rests on three fundamental pillars: deterrence, forward defense, and alliance solidarity. We seek to deter war, but if the Soviet Union or other countries initiate hostilities or conflict, we intend to defend ourselves and our allies as far forward -- in the direction of the aggressor -- as possible. The Navy does not plan to go it alone. Indeed, the mutual support of our sister Services and our allies in a coalition defense is the essence of our strategy of maritime superiority.

The Navy-Marine Corps Team makes the strategic difference in the national military strategy of deterrence by foreclosing options and creating uncertainties for the Soviets, forcing them to focus on a narrow range of strategic choices, while at the same time increasing the risk that those choices might fail. Should deterrence fail, our response to aggression could take one of four forms; we could attempt to meet force with like force at the point of attack, increase the intensity of the conflict, alter the geographic breadth of the conflict, or control the duration of fighting.

Holding at the point of attack leads to long wars of attrition and does not by itself generate pressure to end the war. Escalation -- especially the threat of escalation -- can deter attacks and discourage further actions once a battle is joined. But escalation is an option fraught with the most serious and frightening risks.

The Navy-Marine Corps Team provides useful options in the other potential responses to aggression -- altering the geographic breadth or duration of the conflict. Maritime superiority enables us to deny the enemy any advantage through expansion and permits us, if we choose, to take the conflict to a geographic area where the enemy does not want to fight. Our ability to seize the initiative and force diversion of Soviet resources helps to prevent them from calculating a sufficiently favorable "correlation of forces" to launch aggression. If a conflict arose, the Navy and the assault capability of the Marine Corps open options to gain leverage for war termination on favorable terms by threatening to outflank the aggressor.

The inherent flexibility of seapower which permits us to outflank a foe has a series of benefits. We can force the Soviets to spread forces around their perimeter, requiring a considerable commitment in personnel and material resources to the defense of otherwise secure flanks in the Baltic, the Kola Peninsula, the Black Sea littoral, and the Soviet Far East. They must commit resources to defend against a multiplicity of maritime operations, developing counters to submarines, surface ships, aircraft, missiles, mines, and amphibious and special forces. Maritime forces link the North American, European, and Asian elements of our global alliance. The Navy discourages the Soviets from contemplating division of the system and piecemeal attack.

Finally, should it become necessary, the Navy is central to our ability to outlast any aggressor. Secure sea lanes and assured resupply and reinforcement of the battle area confront the enemy with the possibility of a longer, tougher fight than he can sustain. The Navy's sealift capability, including the crucial mobilization capacity of the Merchant Marine, is central to our staying power. While prolonged conflict is not an objective, we must nonetheless prepare for such a possibility. History reminds us that wars tend to last longer than anticipated. As wars extend, seapower has played an increasingly dominant role. Confronting a potential aggressor with the prospect of a protracted, exhausting struggle serves deterrence well.

The Navy also makes a powerful and effective contribution to war termination. Its inherent survivability and mobility, well employed, ensures it will still be available to the nation at the close of hostilities. The Navy is the optimum secure reserve force which will ensure a post-war world more congenial to us than to our adversaries.

I said earlier that we do not intend to go it alone. We know that any major conflict will involve our allies and recognize the importance of their contributions. To the extent possible, we structure our forces to take advantage of the role allied naval forces might play. In particular, allied capabilities in mine warfare, air defense, barrier submarine operations, maritime patrol, and associated infrastructure are important elements in maintaining maritime superiority.

If our military power can be isolated from reaching and supporting our allies, we can have little hope of prevailing in a military conflict or terminating such a conflict on terms favorable to the United States or its allies. Indeed, if we cannot project and sustain our military force in the forward defense of our allies in Europe and Asia, we could be isolated and reduced to defending our own shores. The Soviet Union has developed and continues to develop formidable naval forces which the United States and its allies must be prepared to defeat decisively if we are to deny the Soviets success in a major conventional conflict.

Naval forces must plan for rapid and vigorous offensive operations in the European theater if the national strategy is to succeed. We will be required to operate in close proximity to the Eurasian land mass and defeat a combined arms Soviet maritime threat including surface, sub-surface, and air strike forces. A forward defense on the central European front must be complemented by an equally forward strategy on the flanks and in Northeast Asia. NATO faces the Soviet homeland across a single border on the flanks and can carry the war directly to the Soviets. Inability to defend NATO's territorial integrity would seriously weaken the forward strategy.

We must defend Iceland and Northern Norway. Maritime forces are central to that effort. The air/land engagement on the northern flank and the maritime engagement in the Norwegian Sea are inseparable elements of one battle. Maritime forces will be required to engage and defeat the Soviet fleet to control the northern flank. Without such control, a forward defense in the center will be vulnerable. Nor can we cede the Mediterranean if we hope to maintain a united allied front. Here again naval forces will play the key role in maintaining the integrity of the southern flank.

The maritime strategy I have described is a joint effort and the other Services, particularly the U.S. Air Force, can add significantly to our capability with command and control, early warning, air defense, mining and logistics assets. I continue to pursue more effective cooperation with the other Services as a top priority in enhancing our ability to execute the forward maritime strategy. Recent exercises in the North Pacific, North Atlantic, and Caribbean provide heartening evidence of our increased capability to operate jointly at sea. Air Force aircraft controlled by Navy ships and air controllers, and Navy aircraft controlled by Air Force (AWACS) controllers actually intercepted Soviet forces attempting to reconnoiter a major fleet exercise.

While the United States will attempt to control and limit the extent of any conflict, it would be unwise to conclude that a conflict with the Soviet Union could be geographically contained and to plan only for that occurrence. The United States and the Soviet Union are global powers. As such, we face each other in many areas around the globe and we must be prepared for the possibility that a conflict could extend to other theaters. We should ensure that the USSR would never benefit from such an expansion. In this regard, naval forces in the Pacific and other theaters outside NATO play a key role in controlling Soviet ability to expand a conflict for their own benefit. Moreover, our ability to move offensively in the Pacific ensures the stability of our allies and forces the Soviets into a defensive posture in that region -- directly contributing to our ability to limit and control a major conflict.

Naval Operations

My description of the utility of our Navy and Marine Corps in peace and crisis as well as limited conflict is not an intellectual exercise, but a reflection of naval operations over the past year. The Navy has been fully committed in support of national policy.

The odyssey of the RANGER Battle Group provides an important example of that commitment and the value of flexible operational scheduling. Deploying from her homeport on the west coast in July 1983, RANGER and her ships in company were diverted on short notice to proceed to waters off the coast of Central America in support of national security interests in the region. After successfully completing that mission, the battle group sailed on towards its original destination in the western Pacific.

With the escalation of the Iran-Iraq war and the attendant threat to the Straits of Hormuz, RANGER was rushed to the Indian Ocean. There her battle group demonstrated our commitment to maintain the integrity of vital Persian Gulf and Middle Eastern oil Sea Lines of Communication (SLOCs). Of course, the battle group could also have been employed if confronted with any sudden escalation in Lebanon.

After 122 days without a port call, RANGER returned again from the Indian Ocean to duties in the South China Sea during the final stages of her eventful deployment, having been relieved in the Indian Ocean by the forward deployed MIDWAY Battle Group. This is but one example of the flexibility of naval forces. I could provide other examples from the 10 battle group deployments in 1983, every one of which was diverted in some manner from its initial deployment schedule in support of national security policy.

In addition to eight of thirteen carrier battle groups, three Amphibious Ready Groups with embarked Marine Amphibious Units, and a substantial portion of our multi-mission nuclear attack submarines are at sea ready around the clock to defend Americans and American interests, as well as to support our allies. Strategic ballistic missile submarines are continuously deployed to the far reaches of the world, providing strategic deterrence and enhancing international stability. Not only the ships, aircraft, and submarines are on station; at this very moment, over 110 thousand Navy men and women are at sea, underway in all parts of the world from our home waters to the Persian Gulf, and from the Aleutians to the vast expanses of the South Pacific. An additional 50 thousand of the Navy's personnel force are deployed away from the continental United States, serving their country far from home, family and friends, most of them for periods of six months or greater.

The first deployment of the modernized battleship NEW JERSEY provides an example of the flexibility demanded of our naval personnel. Departing homeport in June and arriving in the western Pacific for what was to be a relatively short shakedown cruise, she was diverted from a return to homeport to provide a naval presence off Central America, and then ordered to the Mediterranean in support of our peace-keeping forces in Lebanon where the ship remains today for an indeterminate stay. This unusually extended deployment also provides an example of the ability of our Naval Reserve forces to contribute when needed. In the period of one weekend, more than 650 reserve personnel volunteered for duty onboard NEW JERSEY over the Christmas and New Year Holidays so that active duty crew members, who had been away from their families for six months, could spend the holidays at home. We temporarily recalled 135 volunteers. Contrary to the expectations of some, we have never been short of people to man our battleships. The patriotism and determination exhibited by the crew of NEW JERSEY and those reservists who volunteered to relieve them during the Christmas season is heartwarming. We should never forget that they are serving their country with the most precious assets they possess -- their time and their lives.

While maritime strategy in large scale conflict provides the principal underlying rationale in building an effective Navy, a vital day to day concern for the current operating forces is the real threat presented by international terrorists. The 23 October 1983 Beirut bombing which killed 241 of our servicemen leaves no doubt that we are subject to brutal acts of destruction and killing at any time.

Other recent activities of state sponsored terrorists have demonstrated that we live in a world which is only nominally at peace. Today, and every day, we must be prepared to counter adversaries who routinely approve of and commit unequivocable acts of war. Understanding the true nature of this situation is equivalent to realizing that we are already in "harm's way." The inherent flexibility in employment, natural mobility, and modern military capabilities of naval forces are important advantages which we are using to recover and maintain the initiative against potential terrorists. An example of our overall effort to deal with this issue is the modification of the peacetime Rules of Engagement to reflect current international realities. Deployed naval forces are now operating under a new set of engagement guidelines that establish a proactive posture designed to prevent potential terrorists from completing a successful attack. This approach to denying terrorist adventurism is particularly important in the Persian Gulf and Eastern Mediterranean.

For our forces ashore, I have directed implementation of specific initiatives to improve Navy Physical Security including such things as: establishment of a Navy Anti-terrorist Indication and Warning Alert Center, augmentation of guard forces, and indoctrination of all personnel into the generic and regionally specific threat. Being prepared to deal with acts of war demands no less. I believe the world must know that Americans have the will, and that U.S. military forces have the capability to defend U.S. security interests and to remain firm in the face of fanatical, but often covert and cowardly enemies.

The capability to meet operational requirements over an extended period depends heavily on our ability to build and man the 600-ship Navy with its 15 carrier battle groups and amphibious lift for the assault echelons of a Marine Amphibious Force and a Marine Amphibious Brigade. In terms of hardware, we are in sight of the 600 ship goal with about 525 ships in the inventory by the end of this fiscal year and another 88 on contract. We will reach 600 ships and the associated air wing strength in 1989 as planned.

Congressional interest and support in achieving that goal have been crucial and, in view of recent world events, rightly founded. However, I am greatly concerned over manpower ceilings specified by Congress which make it impossible to man those forces properly. Solutions to manpower deficits take time; we must begin now to recruit and train the people to operate and support those 600 ships. A large percentage of the manpower requested is active duty since they will be serving aboard ship and aircraft squadrons slated for lengthy overseas deployments. Growth in reserve manpower is significant and about all we can achieve. This increase is being targeted to replace active forces whenever it makes sense.

Since the end of World War II, U.S. naval forces have been continuously engaged in an increasingly difficult and complex effort to safeguard national interests throughout the world. They have been an essential element in our deterrence while also uniquely capable of safeguarding our national interests in crises and regional conflicts worldwide -- as demonstrated over the past year in Grenada, Central America and Lebanon. The Navy also remains prepared to establish maritime superiority and make major contributions to the successful outcome of any extended or major conventional conflict while continuing to play a major role in the maintenance of the strategic nuclear deterrent.

We look to sustained Congressional support to modernize and man the U.S. Navy. Your help will ensure that we continue to be an effective instrument in achieving the full range of national security objectives.

THE NAVY TODAY

Last year at this time, I reported to you on my positive views regarding "the current state of the Navy because of the favorable trends developed with your support." I am pleased to report that favorable trends continue. Over the past year we have again increased the overall readiness and capability of the U.S. Navy in consonance with our long range objectives. Improvements to both active and reserve navy components have proceeded in a balanced and integrated manner to ensure maximum total force effectiveness over the broad range of maritime strategy needs.

While we have made progress in rebuilding our badly eroded maritime strength, the U.S. has not undertaken an uncontrolled naval expansion. Ship force levels have grown at an annual rate of approximately 2.5% since 1981 and are projected to grow no faster in the future. Navy active enlisted personnel strength has increased at an annual rate of approximately 2.5% since 1981 and will require no more than 2% annual growth until the 600 ship Navy goal is reached. These growth rates are both achievable and affordable.

Personnel

Conventional wisdom subscribes to the hypothesis that, in military operations, it is people who make the difference between success and failure. I subscribe wholeheartedly to that premise. Even with the mechanization and automation provided by modern technology, there is still no substitute for an intelligent, well trained force of patriotic men and women.

Navy planning over the past few years has placed great emphasis on building a professional, disciplined, and properly manned total personnel force. Our program begins with recruiting enough people with the required skills and aptitude. Next comes training, both formal and on the job, which enables our officers and sailors to perform both individually and as part of a team. Finally, we must retain those people who through their performance demonstrate potential for future professional growth. I am happy to report that we have been successful in all three areas during the past year. Our success in meeting the challenge of managing the dramatic increases in naval reserve personnel will be detailed in the discussion focused on Naval Reserve capabilities.

Active enlisted recruiting results, for the third year in a row, reached 100% of the goal. More importantly, nearly ninety percent (60,000) of the Non-Prior Service (NPS) male enlistees had high school diplomas -- well above the expected 57,000. Significantly, aptitude test scores continued to increase and were overall 11% above original FY 83 recruiting goals. These results continued the improving trend of recent years; however, this should not be seen as proof that 1985 will be like 1983. A decreasing manpower pool, improving economy and expanding civilian employment opportunities will clearly increase the difficulty of recruiting quality personnel.

Progress in retention has been equally impressive during the past year, as indicated in Table 1. First term, second term, and career enlisted retention rates have surpassed goals for the third year in a row, and represent dramatic improvements in the retention picture. Retention gains have contributed to a reduced petty officer imbalance -- from a high of 22,200 in FY 80 to a present day figure of 9,300 -- which in turn has resulted in improved force readiness. Experience levels as measured by the increase in the career enlisted force have risen about 21% in the past three years. As a result, we can train our young people better, reduce corrective maintenance actions, manage resources better, and generally minimize waste through a healthier, more professional leadership base.

Officer retention improved in all communities, but strength figures have not yet reached the levels required to eliminate midgrade shortfalls in the Surface Warfare, Pilot and Submarine Warfare Officer communities. Imbalances in those communities are classic examples of how previous difficulties in recruiting and initial retention can cause present day middle grade shortages. These shortfalls attest to the need for maintaining positive momentum in recruiting and retention efforts for both officer and enlisted.

TABLE 1

Enlisted Retention

	FY 81	FY 82	FY 83	FY 84 (GOAL)
1st Term	41.7%	50.3%	55.7%	50%
2nd Term	56.9%	63.0%	65.4%	65%
3rd Term	94.1%	95.3%	96.6%	95%

Officer Retention

	FY 81	FY 82	FY 83
Surface Warfare	42%	43%	45%
Pilot	42%	49%	58%
Naval Flight Officer	65%	73%	74%
Nuclear Submarine	33%	39%	46%
General Unrestricted Line	46%	44%	60%

Our most serious problem is the 26 percent shortage of experienced nuclear qualified officers. Year groups entering these pay grades are particularly small due to chronic accession shortages and inadequate retention. Consequently, the nuclear officer shortage in the ranks of Lieutenant Commander through Captain will worsen to 33 percent by FY 89, as indicated.

Midgrade Nuclear Officer Shortage

	FY 83	FY 86	FY 89
Deficit	495 of 1886	635 of 1995	689 of 2065
Percent	26	32	33

The solution to the severe midgrade nuclear officer shortage has three vital components. First, we must minimize losses from the existing midgrade group; second, we must meet our retention goals for junior officers; and third, we must provide for consistent achievement of accession goals.

External factors contributed to recent improvements in recruiting and retention. The Administration's Fiscal Year 1981 and 1982 compensation initiatives coupled with high unemployment in the private sector helped both recruiting and retention. Surveys indicate that competitive compensation, retirement system stability, and the value of non-pay benefits shape retention decisions of our highest quality careerists. The special and incentive pay structure has had a marked effect on retention of personnel in critically undermanned or particularly arduous jobs.

Increased retention is the primary reason for our improving readiness. For example, the mission capable rate for aircraft, an indicator which measures the level of personnel manning and training as well as funding for spare parts and support equipment, has increased from 59.2% in 1981 to 66.3% in 1983. The combat readiness rating for aircraft squadrons, a wartime readiness measure, has risen 24.2% over this period. The combat readiness rating of all types of surface ships has risen 14% over the same period. Our studies show that people have made this difference. Clearly, the pay raises since 1981, and improved special pays for skilled personnel such as Career Sea Pay, Aviation Officer Continuation Pay, Nuclear Officer Incentive Pay, and the Selective Reenlistment Bonus are cost effective initiatives which directly influence combat readiness.

Despite the progress made in recent years, we still face personnel shortages and imbalances. This is not the time to transmit negative signals on specific issues of pay and benefits. Any decreases, real or perceived, in total compensation including insensitive attacks on the only remaining stable element of today's compensation package, i.e., the retirement benefit, could combine with an improving economy to erode and reverse the recruiting and retention gains already achieved. Such a result could prevent the Navy from reaching future force structure goals. The current pay and benefits system maintained by competitive pay raises will keep our ranks fully manned with capable men and women.

While we must continue our recruiting and retention successes to maintain the force, the Navy could not meet even the most basic of military missions without proper training. The Navy's training program is an integral part of total manpower planning. The increasing sophistication of equipment requires that individual training courses continually be reviewed. We must enroll only properly qualified individuals and send sailors to fleet positions who are thoroughly trained to operate and maintain their assigned equipment.

Added emphasis on training combined with new and strengthened management initiatives in this vital area can significantly increase warfighting readiness in a cost-effective manner. To this end, we have developed a comprehensive Navy-wide training strategy. We are reviewing our curriculum to eliminate redundancy by ensuring that each training segment is tailored to individual needs at specific career points and builds upon previously received skills. We are also embarking on a program to improve our ability to assess training Navy-wide. To ensure that we continue to pursue each of these initiatives, I personally assess our progress in semi-annual reviews.

Individual training provides the base for training readiness, but unit and multi-unit training exercises are the vehicles which make the fleet ready to meet national tasking. We have emphasized an entire spectrum of multi-unit training exercises from the simple, with two or more ships, to the complex, with multiple carrier task groups in joint and combined exercises.

Our people are ready in all aspects to operate and maintain the fleet, both in home waters and in the far reaches of the world. The talented youngsters who are now volunteering to serve are well matched to our modern weapons systems. Continued Congressional support of resources for recruiting, retention, all aspects of training, and manpower distribution will ensure that they remain so.

The 600 Ship Navy

The credibility of overall military capability relies on a balance between individual unit capability and the total numbers of units available. It is easy to lose sight of this relationship in the process of counting assets without regard for total capability. While there was no net numerical increase in fleet battle forces this past fiscal year, the increase in capability was substantial. A number of older and less capable ships at the end of service life were retired, but total fleet capability increased as a comparable number of far more potent units were commissioned.

Ships added to the force include: battleship NEW JERSEY, the first AEGIS cruiser, TICONDEROGA, nine OLIVER HAZARD PERRY class frigates, three LOS ANGELES class attack submarines, and two OHIO class nuclear ballistic submarines including the recently commissioned GEORGIA. These ships represent an improvement in our posture in all naval warfare and deterrent roles. The unique capabilities of NEW JERSEY to provide fire support for our Navy-Marine Corps team as well as serve as the principal ship of a surface task group for presence and sea control tasks have been well documented this past year. IOWA will join NEW JERSEY in providing these important fleet capabilities fully nine months ahead of our original deployment schedule. The addition of modern frigates to the force brings the Navy one step closer to meeting peacetime deployment escort requirements and having the minimum prudent level of escorts for the wartime mission of protecting vital shipping, underway replenishment groups and amphibious forces. The increasing numbers of progressively more modern nuclear powered attack submarines are playing an important role in our capability to support our forward strategy because of their unique capability to fight and survive in enemy waters. The additional TRIDENT submarines provide another major increment in an effective nuclear strategic deterrent.

The carrier Service Life Extension Program (SLEP) is the cornerstone of our plans to ensure modern carriers for the fleet, and stability in carrier force levels through the turn of the century. Both goals are being achieved at a fraction of the cost of new carriers. USS SARATOGA rejoined the fleet this past year and is now part of the fleet operational employment cycle. USS FORRESTAL has reached the middle of a SLEP process whose management has been improved by lessons learned from SARATOGA. Actions include: increased technical guidance and inspection requirements for boiler and weapons elevator repairs; increased inspection and oversight by Naval Sea Systems Command Headquarters and Shipyard Operations review teams; and increased crew involvement in quality assurance.

As with ship force levels, maintaining aircraft inventories must include a carefully balanced program to ensure individual aircraft capability and the proper numbers of each. Aircraft deliveries during the past year remained on schedule to match the build-up required by the 600 ship Navy. A total of 274 new aircraft entered fleet inventories including the F-14, the F/A-18, currently used by both the Marine Corps and the Navy, and the EA-6B. The replacement of F-4 aircraft by F-14 models continues, providing the carrier battle groups with an expanded zone of air control. The introduction of the F/A-18 with its ability to function effectively in either the fighter or attack roles provides sea based air wings with not only the latest in aircraft technology, but the flexibility to tailor quickly carrier air operations to a variety of threats. We are also examining a new concept of flexible air wing composition to take advantage of the versatility of our newer aircraft and the unique characteristics of our modernized A-6.

Naval Reserve

With a mission defined by law to provide trained units qualified for active duty in time of war, national emergency, or as national security dictates, the Naval Reserve forms a critical part of the Navy's total capability. As with many other vital areas, the inadequate resources of the seventies degraded our ability to support a modern, ready and capable wartime augmentation force. The need to maintain a visible deterrent force and support a forward deployment posture caused resources to be allocated to sustain active forces and operational capabilities. The Navy recognizes that a balanced total force must have the ability to meet peacetime deterrent responsibilities, potential surge requirements for limited conflict, and the general mobilization required for global war. We have worked hard in recent budget submissions to address reserve deficiencies and to achieve a balanced total force.

This increase in emphasis and resource allocation since 1981 has resulted in a significant and rapid expansion of Naval Reserve Capabilities. The planned and executed increase in the Naval Reserve personnel force has been dramatic. The force increased at an annual rate of 5.5% through 1983 and the program approved by Congress for Fiscal Year 1984 will mean an end strength increase in this fiscal year of close to 12%. These increases are in strong contrast to the relatively small active duty increases in the neighborhood of 2% per year, and are at the upper limit of what our manpower acquisition models predict is possible to achieve. This vital expansion in personnel strength is matched to an aggressive resource allocation strategy to modernize and properly support the Naval Reserve. Since 1981, resources devoted to maintain and grow the Naval reserve capability as part of our total force have been increased in real terms at an annual rate of 14 percent through FY 84. These achievements in personnel growth, support and modernization have occurred at about the maximum possible efficient rate.

We are not resting on previous achievements, and a number of actions taken this year will improve and upgrade the Naval Reserve as well as ensure integration of reserve and active forces. We have directed a policy of total horizontal integration of the naval reserve air and surface forces. We have developed comprehensive plans to correct equipment deficiencies in all segments of the Naval Reserve. We have programed for reserve force structure increases and modifications. We have established a Flag Officer oversight committee to monitor all Active-Reserve mix issues. A Total Force Advisory Group, directed by a flag officer, has been formed to analyze all budget issues and new initiatives to ensure reserve forces have the necessary resources to obtain and maintain a high state of readiness. These groups will also reexamine appropriate reserve roles and missions.

These actions are only the latest round of initiatives to strengthen Naval Reserve forces. Examples of previous modernization initiatives which came to fruition in the past year include: transition of the first reserve air squadrons from the A-7B and E-2B to the modern fleet compatible A-7E and E-2C aircraft; activation of an additional Shore Intermediate Maintenance Activity, the latest in a series of reserve manned maintenance facilities commissioned in the past few years; and introduction of the fifth and sixth FF-1052 class ships into the Naval Reserve. By the end of FY 84, the reserve forces will man their first F/A-18 squadron, their first 3 FFG-7 ships, and their first HSL LAMPS MK I squadron to support a modern ASW helo capability for reserve frigates.

As we examine potential missions for the Naval Reserve, a major concern is that reserve forces must be available at the proper time -- which in many cases could mean prior to mobilization during a period of prehostility. For instance, support functions for the Maritime Prepositioning Ships (MPS) have been assigned in large measure to the Naval Reserve Cargo Handling and Construction Forces. We depend on their availability during periods of high tension. If these or any similar forces assigned to the Naval Reserve were not available when required prior to hostilities, it could seriously impact our overall capability.

Congress has frequently given the Navy specific directions regarding reserve management, even dictating manning levels and administrative control of individual reserve units in some cases. Direction at this level of detail is not helpful in achieving our shared goal of expanding, where possible, the contribution of the Naval Reserve. We continue to review our roles and missions to identify broader, cost-effective reserve contributions. We also recognize that a more intense effort is required in this area and anticipate reporting to you on a comprehensive plan as well as specific initiatives in budget reports and supplemental submissions.

Crisis Response

I want to call your attention to an important funding issue in the readiness area. The Navy is not allowed to budget for contingencies, and for years has absorbed within already appropriated funds the additional operating costs associated with crisis tasking. We have thus far accommodated these expenditures in the short term, but such unplanned costs degrade material readiness over the longer term. The incremental costs for the many unplanned contingencies that arose during the previous year illustrate the problem. The Navy share of Lebanon operations alone cost $51 million, to say nothing of Grenada, Central America, and the KAL 007 downing. The use of those funds to cover unplanned contingencies left unfunded some crucial items in the readiness accounts, including spare parts and material support.

Additionally, the operations and maintenance account is a favorite target for initiatives to reduce outlays and is frequently caught in a deadly squeeze. Congressional reductions and unplanned contingency costs erode our ability to realize the full benefit of planned improvements in material readiness. The Flying Hour Program (FHP) is an important counter example to this trend. Congressional actions which improved FHP funding in FY 84 were both welcomed and appreciated. This remains a very tightly constructed program and your continued support in FY 85 is solicited.

There are positive aspects to the contingency operations we have conducted. Navy personnel are obtaining the benefit of some of the finest training that they could possibly receive. As a side issue, the flexible operations concept has minimized additional costs. Wherever possible, contingencies have been met with forces already scheduled for deployment and available for immediate use, avoiding massive rescheduling of forces and reallocation of resources while minimizing additional underway ship days. Even more significantly, this procedure minimized the hardships imposed on personnel by additional extended or unplanned deployments.

Research and Development

Modernization of naval forces can only be as good as the program of research and development that supports the acquisition process. Fleet effectiveness today is a result of forward thinking individuals who made yesterday's ideas today's reality. The successful results of numerous Research and Development (R&D)

programs are now entering the fleet and improving our capabilities in all areas. The introduction of AEGIS, improved acoustic processors used in our ASW patrol aircraft, Vulcan Phalanx Close-In Weapons Systems and fast hydrofoil patrol combatants being used so effectively in the Carribean are a few examples of those products. Our research and development efforts are balanced to stay ahead of the threat with programs such as MK-48 ADCAP, MK-50 ALWT and JTIDS, and to take advantage of future breakthroughs in technology. Low observables and directed energy weapons technology are excellent examples of areas where important scientific phenomena can be harnessed to increase our future maritime strength.

There are two R&D management issues I want to highlight. We have initiated several management reforms to help us acquire our planned systems. Tighter, simpler acquisition processes are in place at all levels, governing the definition of requirements, the acquisition decision process, and how we document what we are about. They will ensure that programs are of the highest priority, can be given the attention necessary for efficient development and production and, most importantly, that the end products will be affordable. To that end, over the past four years new starts in R&D have been cut in half, and we have reduced the number of R&D projects by 100 (521 to 421). These new management procedures have only recently been instituted and the full payoff is ahead.

Secondly, 239 of 319 line items in the FY 84 R&D budget were changed directly or indirectly by Congress at least once during the legislative process. House committees were responsible for 147 changes while Senate committees were responsible for 129. Many programs were modified several times over the year with 93 substantially restored to the original budget proposals. At the end of the process, 173 of the 319 individual programs survived as submitted, but total proposed R&D funding was effectively decreased by 7.5 percent. All parties concerned spent considerable time in this evolution with not much to show for the effort. Dedicated, hardworking Navy program managers attempting to manage these many R&D line items spent most of the year wondering just what impact Congressional actions would have and how they could hedge against uncertain funding. This redirection of a large volume of R&D line items is a relatively new phenomena. For example, in 1970, the Congressional review resulted in changes to only 5 programs, and as late as 1975, only 23 programs were affected. This level of involvement in R&D management is an unnecessary destabilization of the acquisition process. We need to work together to improve this situation.

The total 7.5 percent decrease to R&D funding was a significant setback to our efforts in the past several budgets to restore overall R&D funding to the historically proven levels of adequacy. The technological lead that the U.S. Navy currently enjoys over the threat is a product of R&D budgets that in the 60's and 70's approximated 10% of total Navy funding. Increases in the present budget are in the underfunded tactical area and only approach adequate R&D funding. We must ensure that these levels are maintained for the remainder of the 80's if we are to maintain an edge on the technological competition.

Technology Transfer

Technology transfer remains a subject of major concern to me. It is a matter of public record that the U.S. is numerically inferior to the threat in almost all categories of military hardware. We rely heavily upon qualitative advantages to tip the balance in our favor. Our productive development programs and utilization of modern technology have given the U.S. the lead in a number of areas: Anti-submarine warfare, sea based strategic deterrence, and sophisticated, carrier capable aircraft to name just a few. Unfortunately, the Soviet Union and its surrogates continue to mount a systematic, and all too effective effort, using both legal and illegal means, to steal the free world's technology base. In some critical instances, their effort has provided big dividends, shrinking our once eight to ten year technology lead to an uncomfortable two to three years.

Acquisition and application of our technology by the Soviets allows them to remain state-of-the-art without expenditure of massive amounts of time and money for research, development and testing. It means that each of their rubles spent on military hardware goes further and is multiplied by the dollars we spend on research and development of systems and technologies which are then pirated nearly free of charge. It is ironic that our nation is currently being targeted by Soviet weapons at least partially developed by Americans and partially financed by our tax dollars. We must do whatever is necessary to withdraw from this arms race against ourselves, where we must counter our own advancement because it has been bought, given away or stolen off the shelf, and then integrated into the Soviet military machine.

Several urgent suggestions regarding the defense R&D budget are pertinent. First, we must do everything possible to prevent the Soviets from benefitting from the dollars we spend for research and development. Protecting our critical military technology will go a long way towards increasing the cost effectiveness of the defense budget. Secondly, through our international cooperative R&D programs with our allies, we must continue to exchange technology when mutually beneficial, particularly to eliminate redundancy in R&D expenditures. Third, it is imperative that we not dither away the narrow technological lead I have described with endless reviews during the development and acquisition process. We have recently made some important policy improvements in this area. Acceleration of the acquisition process is a national security policy issue more suitable for Congressional review than the endless perturbation of the R&D budget which I described earlier. Finally, the Navy is fully cooperating with the DOD program aimed at developing and implementing more stringent technology transfer policies and control procedures.

Naval Space Command

The catalyst that integrates surface, sub-surface and air strike forces into an effective open ocean fleet is adequate surveillance, command, control, and communications systems. We have taken another step forward in this area during the past year with the formation of the Naval Space Command. Admiral Hayward's description of the situation in 1981 is still accurate today: " . . . the very survivability and battle utility of naval forces are inextricably linked to full and imaginative use of opportunities in space." We rely today upon space-based systems to perform vital command and control, communications, navigation, environmental, and surveillance functions. The Navy is by far the largest tactical user of space-based systems.

Formation of the Naval Space Command is the latest in a series of actions which recognizes the importance of space control to sea control. The Navy Space Systems Division within my staff was formally organized in 1981. In 1982, space operations and engineering subspecialties were defined, postgraduate degree programs in space operations and engineering were initiated at the Naval Postgraduate School, and a flag officer was assigned to head the Navy Space Project Office within the Naval Material Command. The new Naval Space Command will allow us to provide better coordination in the operational use of space capabilities and resources as well as support the coordinated mission and hardware development activities for current and future space activities.

Modernization in surveillance and C^3 activities is clearly tied to space development initiatives, now as in the past, and the Navy is actively involved. For example, our communications capability will be enhanced this summer by the launch of the first Leased Communications Satellite (LEASAT). The Navy Extremely High Frequency satellite package and terminal program is being developed to provide wartime essential communications. The space based NAVSTAR Global Positioning System will allow precise location capability to every Naval functional warfare area. The Navy will continue to have a vital and active interest in space and, as in other areas, will work closely with the other Services to assure a clear definition of our respective roles and a truly synergistic effort.

Management

Last year I reported on the Navy's efforts to improve management policies and procedures. Progress continues. We well understand our responsibility to administer defense funds with the utmost care and fiscal prudence. In all phases of building and operating a Navy, from the planning and programming to execution, cost-consciousness is a central theme. We will continue to reevaluate objectives and programs with the goal of achieving the most for the least expenditure of taxpayer dollars. I hold every uniformed and civilian manager accountable for his stewardship of public funds.

The unreasonable prices demanded for certain spare parts became a matter of public concern over the past year. The problem was initially revealed by internal Defense and Navy Department personnel implementing a well established program expressly designed to expose management inefficiencies. We continue to strive to discover cost problems, to analyze their causes, and to take appropriate actions where necessary. In an all out effort to eliminate pricing abuses in spare parts procurement, Secretary Weinberger announced a ten-point defense-wide program. The Navy in turn initiated a special project termed BOSS -- Buy Our Spares Smart -- to solve the Navy's part of the problem.

Project BOSS includes over 100 initiatives to date which in part provide for: decreasing the cost of spares by purchasing directly from the original equipment manufacturer or by competitive means instead of buying sole source from prime contractors; expanding competition in the procurement of all spare parts; paying only the "should cost" value of spare parts; assuring that the procurement work force is properly trained; and, most importantly, providing reports to the proper authorities when prices appear unreasonable. Examples of the specific implementing portions of this program include: PRICE FIGHTER, a team of experts dedicated to review spare parts to determine their intrinsic value; introduction of specific training courses on the fundamentals of pricing; and encouraging all employees to challenge unreasonable spare parts prices by direct use of a "hotline" installed specifically for this purpose.

Although just being implemented, Project BOSS already has helped to avoid unreasonable expenditures. A few examples include: changing the sole source contract for two special gimbals to a competitive offer with savings of $300,000; obtaining technical data from an original manufacturer which allowed the procurement of an internal replacement part vice an entire unit for a savings of $40,000 -- over 80% of the originally projected cost; and awards to two dedicated employees who together saved the government almost 2 million dollars because of their initiative to locate competitive sources for contracts that were previously sole source. In addition, the PRICE FIGHTER team has in its first month of operations identified potential cost savings of $1.4 million on 28 items which appear to be priced significantly in excess of their reasonable value.

In order to achieve our objectives of obtaining major hardware contracts at the lowest possible realistic prices, we realize that sound business practices must be applied throughout the procurement process. Increasing competition in all types of procurement is an integral part of our program. To this end we appointed a flag officer to be our first Competition Advocate General and his efforts have paid substantial dividends. In FY 83 the Navy competitively awarded $13.2 billion, or 30.5% of our total direct purchase dollars, an increase of 40% over the FY 82 figure of $9.4 billion. Increased competition was principally responsible for cost savings of over $480 million dollars on eleven FY 84 contracts totaling $5.9 billion.

The Competition Advocate General has also successfully contested and resolved contractor assertions of proprietary rights in spare parts requirements. An increasing number of major Defense contractors are now providing asserted proprietary data without charge. This will allow the Navy to achieve substantial cost savings by the use of competition for increasing numbers of spare parts.

Navy managers continue to emphasize other sound business practices including production stability to allow contractors to plan ahead. Early planning for competition will result in 90% of planned five-year new construction and conversion programs being awarded competitively. Similarly, by utilizing proven commercial standards and specifications where possible, we foresee additional cost savings under the five-year shipbuilding program. Finally, industry is being encouraged to use new manufacturing techniques and technology to improve productivity and save taxpayer dollars.

In a broader management context, we are continuing to strengthen our Fraud, Waste and Abuse Prevention Program. Under the guidance of the Naval Inspector General, a comprehensive plan has been developed which combines the many independent programs already in existence with a number of new initiatives to strengthen management at all levels. Updated training programs, an increase of internal audit and inspection billets, the establishment of a Navy hotline for direct reporting, a revised standards of conduct directive, more rapid reporting of uncovered problems, and increased recognition of employees through performance ratings and special awards are only a few aspects of this important program.

In our internal investigations to determine problems and develop corrective plans, we uncovered a number of areas where we need the direct support and involvement of Congress. Appropriation of adequate resources for the personnel and Automatic Data Processing (ADP) assets can make the difference in managing the spare parts accounts. Unfortunately, Congressional budget and personnel reductions over the past few years have adversely affected exactly the areas where we need more support. Obsolete and inefficient ADP hardware must be replaced. If we are to gain full benefit from project BOSS initiatives and reach our FY 85 goals in inventory record accuracy, additional civilian end-strength of 735 must be devoted to spare parts and related inventory management with additional resources allocated in the out years.

We have placed special emphasis on management of data processing and, more importantly, of information itself during the past year. At our request, the National Academy of Sciences created a group of outstanding professionals in information sciences from industry and academia to suggest improvements. We have received their recommendations, have implemented some, and are at work on the remainder.

Over the past several years, I have witnessed large increases in Congressional requests for information above and beyond the already voluminous material forwarded as part of the budget review process. This trend has taken place against a background of Defense Department reductions in headquarters staff personnel resulting from internal pressures and Congressional mandates. As a result, we face an increasing workload to respond to Congressional inquiries and perceive much greater Congressional involvement in the management of Navy programs.

I have mentioned the Naval Reserve and R&D, and offer two other examples of outside management which may not increase efficiency or effectiveness: an additional independent testing organization separate from those already in operation and the requirement to obtain "warrantees" for military hardware.

I have serious doubts that placing a new organization on top of an already existing and highly effective testing organization, such as the Navy's Operational Test and Evaluation Force (OPTEVFOR), is an efficient use of resources. OPTEVFOR has been functioning for many years as a truly independent test and development agency for the Navy in all major acquisition programs and is essentially the model for the new DOD organization and other Service agencies. The creation of a new organization as directed by Congress will certainly lengthen, not shorten, the overall development and procurement cycle.

The requirement to obtain warrantees for military hardware, while again well meaning in concept, will not achieve the desired results of greater reliability and lower overall military acquisition and operating costs. Military hardware designed to meet and defeat the threat does not, and cannot, come from the same mold as the average household toaster or television set. Many military products necessarily involve state-of-the-art technology, are required to operate in extremely hostile and unforseen environments, and must tolerate abuse well beyond that found in the home. Forcing manufacturers to guarantee a military product has the potential of increasing the cost of equipment, reducing the number of competitors, shrinking the defense industrial base and, in the long run, making it more costly to maintain the military posture to deter war and defeat the threat.

THE NAVY'S BUDGET

The Navy's budget is not just an abstract exercise in balanced funding. The balance between the four pillars -- readiness, sustainability, modernization and force levels -- reflects a comprehensive and iterative process which examines and analyzes in considerable detail the various hardware, manpower and supporting programs that are necessary to execute in the most cost effective manner the maritime strategy which I have described. We continually test and evaluate our maritime strategy and theater concept of operations against real world constraints by the use of wargaming, carefully planned Fleet Exercises and feedback from current operations at sea. The results are not only beneficial to developing a realistic and executable maritime strategy, but also provide the blueprint for program redirection which impacts directly on the programming and budget process.

For FY 85, the Navy is requesting a total of $92.4 billion in total obligational authority. In terms of the four pillars, over half of this budget provides for readiness which directly affects our ability to support current operations with people, material and training. An additional quarter is slated to procure the ships and aircraft which will constitute future force levels. The remaining fourth is divided between modernization, with resources devoted to maintain our technological edge over the threat, and sustainability, with programs to hedge against the probability of a protracted global conflict. The growth trends in each of the major areas represent a relatively uniform extension of the FY 84 budget and reflect what is needed in each area to support the maritime strategy. The accounts have been structured to provide for a capable, ready naval force today, the 600 ship fleet of the near future, and capitalization for technological breakthroughs in the long term.

Be assured that we were all well aware of the projected budget deficits and the potential impact on the economy. Congressional concerns evidenced during previous budget review processes were fully considered as we built the FY 85 Navy budget. The result is a carefully constructed and efficiently balanced Navy budget at the minimum level necessary to meet the threat and defend national security interests. In the next four sections, I will describe the budget resources in terms of the four pillars and highlight what they provide in terms of the capabilities necessary to support the maritime strategy.

FY 85 Readiness

Readiness, a term used rather loosely in some public discussions, is not simply an umbrella for a large number of seemingly unrelated programs and funding streams. It defines and delimits a carefully structured subset of the Navy program whose progress is monitored by a corresponding set of well defined operational readiness indicators. We have invested considerable time and experience in the evolution of a uniform readiness reporting system for the entire fleet, designed for maximum objectivity, and sufficiently detailed to identify specific deficiencies for correction.

The Navy's readiness indicator system goes beyond designating units "ready" or "not ready." It focuses on each of the resource elements such as personnel, equipment, supply support, and training, as well as combinations of particular segments of these resource elements which provide the capability to perform each of the assigned unit missions. As a result, we can define specific mission readiness shortfalls and the corresponding resource deficiencies which need to be corrected.

As indicated in Figure 1, at the fleet aggregate level, overall ship readiness measured by the number of ships reporting in the C1 and C2 categories increased 58% from the low point in early 1981 to the end of 1983. This increase resulted from detailed documentation of readiness levels in each of the contributing components of ship readiness and the appropriate allocation of resources to those areas which demonstrated weaknesses. In 1981, manning deficiencies were identified as major contributing factors to the general low state of Navy readiness. The readiness indicator system provided detailed documentation that the proper unit manning levels and, more importantly, required experience levels and skill balances were simply not there. We knew what we had to do! With the rennaissance of public support for national defense, we were able to allocate resources in an efficient manner to high pay-off personnel readiness improvement programs -- basic pay initiatives, recruiting for additional and higher quality manpower, and special pays such as the Selected Reelistment Bonus program to improve experience and skill balances. As a result, since 1981, personnel readiness has risen by 49 percent and has been a significant factor in improving overall readiness.

Personnel readiness not only affects overall readiness directly, but also indirectly through its relationship to material readiness. For example, in two particular classes of surface ships, our studies show that improved manning (from 80% to 100%) in shipboard ratings decreased the average number of mission degrading equipment casualties by 30%.

Thus, readiness indicators not only provide commanders in the field a tool to understand their day to day force capabilities and availabilities, but also provide headquarters personnel data with which to plan and budget for the proper resource distribution. We are able to discern one-of-a-kind problems as well as class trends, and make explicit resource allocation decisions to correct the most pressing readiness deficiencies. If the forces in being are to be effective, they must be properly manned, sufficiently supported with spare parts and ordnance, and trained to function in expected threat environments.

The FY 85 budget provides funding for continued improvement of readiness levels in support of the full range of national security requirements.

	ANNUAL GROWTH	
	74-80	81-85
Readiness Funding	1%	6%

SHIP READINESS TRENDS

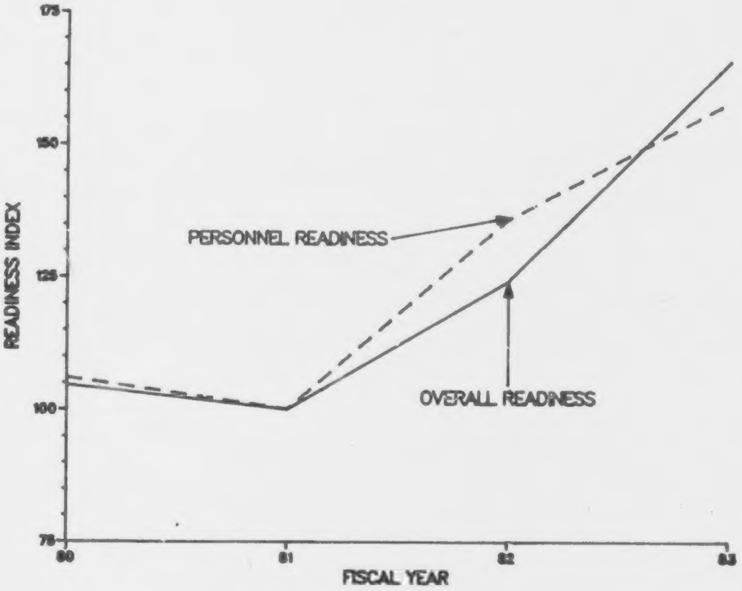


Figure 1

The peacetime presence and contingency operations during this past year have proven the wisdom of continuing to enhance readiness accounts in line with the trend that we began in 1981.

o Personnel

Personnel readiness is critical to fulfilling the maritime strategy. The 600 ship Navy is a soon to be realized objective of that strategy with ship and aircraft deliveries occurring at a modest but steady pace. The FY 85 personnel request supports this measured buildup by allowing us to man today's force and to build the skill and experience needed for the fleet of the near future. We need balanced increases in the total force, including an active forces increase of 10,500 for a total of 575,300. Reserve force structure improvements require increases for average strength personnel in a paid status of 8,700 to reach a total of 124,200, and civilian personnel spaces will total 317,727.

These marginal increases are key elements in supporting future force levels. The active enlisted increase of 2.9% over FY 84 is small in relative manpower terms, and small in dollar costs when compared to initial force level investment costs. Because of previous Congressionally imposed active strength constraints, the Navy will have difficulty in properly manning the shore activities that support the operating force. Reductions to the FY 85 personnel request will only aggravate this problem. If the trend established by Congressionally mandated strength constraints in FY 83 and FY 84, see Figure 2, is continued in FY 85 and beyond, the Navy will be 29,000 below the total programed objective in FY 89.

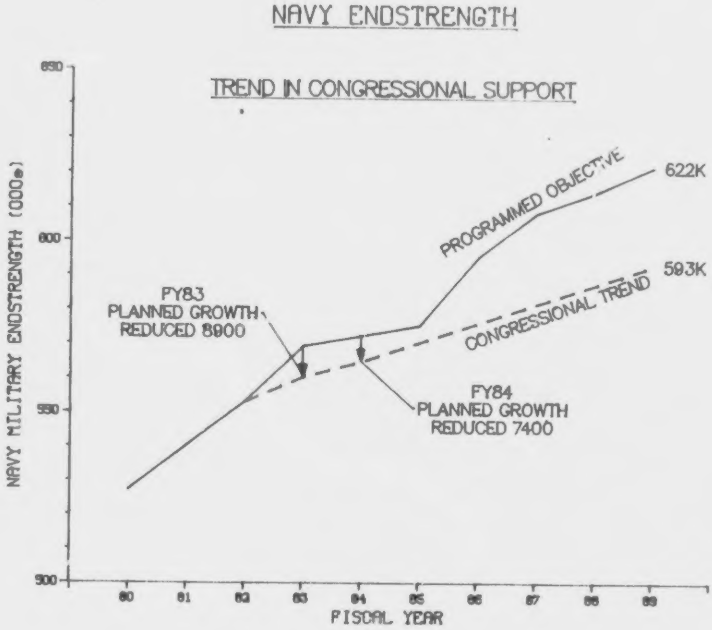


Figure 2

The budget supports the previously planned and FY 84 Congressionally directed increases in Naval Selected Reserve personnel strength. These additions will match the Navy's aggressive reserve modernization program and expansion of reserve roles and missions. The Sea Air Mariner Program in the FY 85 budget has been structured and supported very carefully to meet increased non-rated personnel requirements. Our internal analysis indicates that achieving both the FY 84 and FY 85 manning goals is a very ambitious undertaking.

The nation's pool of military age manpower will continue to decline in the years immediately ahead. A number of studies confirm that the potentially adverse affects of a declining military age manpower base can be overcome -- providing we have full Congressional support for our recruiting, compensation, quality of life and retirement programs.

This year's recruiting and advertising budget is intended to allow us to keep pace with changing market conditions. I must alert you to the fact that the rationale of citing past recruiting success as justification for cutting future recruiting and advertising budgets is an extremely risky approach in an environment of increasing competition. We project precisely such a recruiting environment in FY 85. Providing the necessary quantity and quality of initial entry level personnel is a prerequisite for maintaining required strength levels and force structure.

While not wishing to single out any particular part of the FY 85 compensation package, I want to ensure that the contributions of Selective Reenlistment Bonus and other special pays in reducing the petty officer imbalance and meeting other career force requirements are fully appreciated. The total cost of these programs is insignificant in comparison to the payoff they provide in creating the proper climate for retention of petty officers with vital skills and experience. Figure 3 provides a particularly telling picture of the need to protect our mission critical ratings -- they are in short supply today; we are forced to keep them at sea longer; they are in high demand in the private sector; and they cost twice as much to train.

COMPARISON OF RATINGS CRITICAL TO READINESS AND OTHER NAVY RATINGS

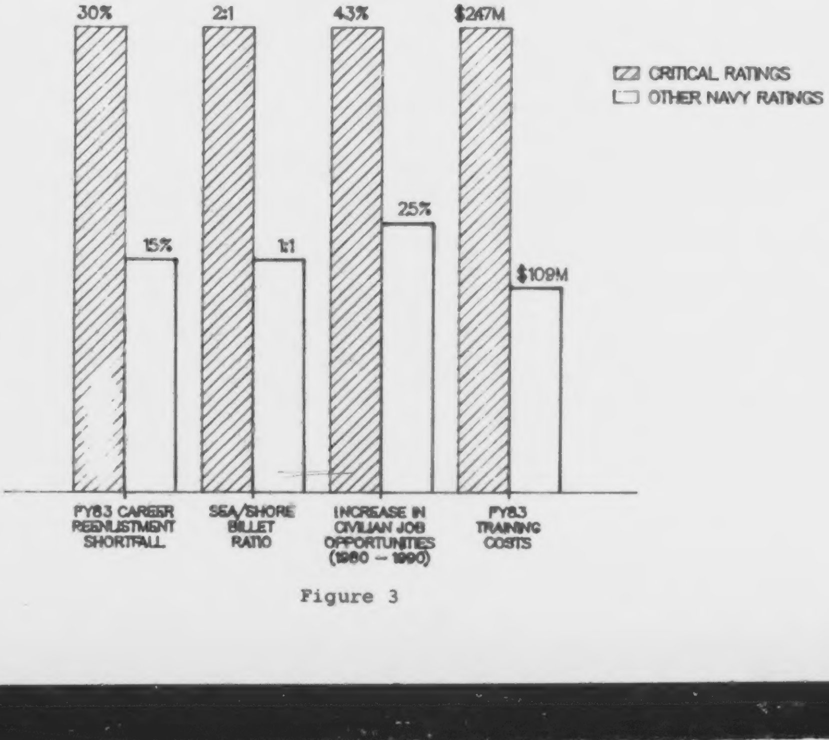


Figure 3

Selective Reenlistment Bonus is an exceptionally effective management tool to correct shortages as they develop without waiting for the lengthy review process involved in approving new funding programs or management authority. The management flexibility, proven results in retention and enhanced material readiness, and the relatively small cost of Selective Reenlistment Bonus make it a very cost-effective program and worthy of Congressional support. In the same way, other special pays ensure that a balance of skills and experience are available to fill the proper jobs at the appropriate times.

Another important part of the personnel budget which has a major impact on personnel management is the Permanent Change of Station (PCS) account. Previous Congressional actions have created a backlog of deferred transfers resulting in unnecessary skill and grade imbalances throughout the Navy. PCS relates in some way to all naval personnel policies, and is part of a much larger total personnel management picture developed over years to ensure that we recruit, train, develop, and retain the best fighting force possible.

A critical issue in this PCS discussion is the rotation rate between sea and shore assignments and its relationship to retention. Sea duty is a unique characteristic of naval service, and experience has proven that personnel need periodic relief from sea duty. We must provide for alternating billets ashore and afloat for all personnel. Furthermore, the sea/shore rotation rate directly affects retention. As you can see in Figure 3, the FY 83 sea-to-shore billet ratio for critical Navy ratings was 6 to 3, or almost twice that of the remainder of Navy ratings. Sea pay has made a difference in retaining these mission critical personnel, but it would not be cost effective to raise sea pay sufficiently to eliminate all shortfalls. In addition to providing the appropriate compensation incentives, we must not allow the sea/shore rotation rate to increase further in these critical ratings. Only with a balanced approach to our critical retention problems -- including adequate PCS -- can we hope to eliminate all petty officer skill shortages.

The PCS program is not on a runaway track. The PCS program just completed in FY 83 showed only a one percent increase in operational and rotational moves above the 1977 level despite a 5.3% rise in end strength for the same period. Only limited opportunities exist to improve this performance further without upsetting current efforts to eliminate skill and grade imbalances and increase the career force. We need Congressional understanding and support for the Navy's FY 85 PCS funding program.

A separate but related issue is the funding of Permanent Change of Station entitlements such as temporary lodging expenses, and the increased Household Goods weight and monetary allowances in lieu of travel which were authorized in 1981 without funding. The effect is that Service members continue to pay moving expenses out-of-pocket, which increase as the penalties of home ownership are considered. This has a direct impact on how our personnel perceive their quality of life in the Navy.

Other programs which influence the quality of life of our service men and women and their families have already received your support. As a result we are able to place more emphasis on the family and the critical influence the family has on the attitudes and behavior of individual service members. Acting through the chain of command, I have attached high priority to quality of life programs such as Family Service Centers, Morale, Welfare and Recreation Programs, Housing, Substance Abuse, and

Physical Fitness. We are grateful for your assistance with these programs which are helping to relieve some of the hardships of Naval Service, particularly for our junior personnel and their families.

Navy personnel leaving the Service continually cite the impending loss of GI Bill benefits as one of the prime reasons for their decision. Over 183,000 Navy members on active duty are eligible for GI Bill education benefits. There are 105,000 eligible members in the critical retention window of seven to fourteen years of service. We cannot predict with certainty how many will leave solely because of this issue, but we do know that in two years, the loss of GI bill benefits has jumped from the 10th to the 4th most important reason for leaving the Service. Thus, the fact that benefits are lost by remaining on active duty unduly penalizes individuals who do continue to serve their country and undermines the retention program. I strongly urge that the December 31, 1989 GI Bill termination date be extended to provide service members up to ten years, after discharge or release from active duty, to use the GI Bill benefits.

The computer models and surveys developed by our personnel R&D program are a relatively small budget item, but vital to understanding the factors that influence personnel recruiting and retention. Improvements in training likewise come from research and development in training methods and devices. Our ability to develop equipment that can be easily operated and maintained depends on application of human factors engineering. FY 84 Congressional actions reduced our programs in these high pay-off areas including the elimination of all research funding for improving recruiting and retention. I ask your support for this year's submissions.

o Material

Material readiness complements personnel readiness. Without equipment which functions when needed, the spares for timely maintenance, the fuel to get underway, and the ordnance to pose a credible threat, the best trained personnel will not prevail. Maintenance requires much more than an adequate supply of spare parts. Ensuring the proper number of overhauls and maintenance availability periods as well as providing the resources to maintain shipyards and other repair facilities contributes to material readiness. In particular, reported indicators of unit readiness, such as the percentage of ships and aircraft fully combat ready or mission capable, depend on levels and distribution of funding in this area.

In the past several budgets, we have made a concerted effort to increase funding in each of these sub-areas of material readiness. We are succeeding! In addition to the dramatic increases in ship combat readiness ratings shown in Figure 1, aircraft mission capable rates, indicators which measure the level of personnel manning and training as well as funding for spare parts and equipment, continued to increase during the past year. We are closing in on an important milestone, noted in Figure 4 -- the achievement of the force wide goal of 70% mission capable aircraft, projected to occur in FY 85 with full budget implementation.

FY 85 budget preparation continued to emphasize improvement in all aspects of material readiness. Funding in the ship overhaul program has been increased to provide for the overhaul of 56 active and three reserve ships. The financial backlog will decrease from three in FY 84 to two in FY 85 and the operational backlog will be reduced from 9 in FY 84 to zero in FY 86. Improving management of the ship overhaul program has been one of my urgent priorities. Our initiatives have been fruitful, as we increased FY 82 and FY 83 overhaul completions within budgeted time and cost, realized a corresponding increase in operational availability of ships to the fleet, and were better prepared to meet national tasking.

The FY 85 aircraft maintenance program includes several Navy initiatives that will result in significant cost avoidance. Aircraft Operating Service Periods are being adjusted when engineering analysis will allow, resulting in a large reduction in the requirement to rework aircraft. Additionally, through the Aircraft Service Period Adjustment program, we will inspect most aircraft at the end of their projected service period in order to determine if the requirement may be further delayed. Thus, we will have some assurance that only aircraft in clear need of maintenance will be inducted for rework. In spite of these efforts, the aircraft rework backlog remains at high levels.

Commencing in April 1985, the procurement and repair of aviation Depot Level Repairable (DLR) components will be financed in the Navy Stock Fund. Operating customers will buy aviation DLR's from the Navy Stock Fund with appropriated resources as those components are needed. The stock funding of aviation DLR's extends the Navy's surface ship DLR test which was approved by OSD and Congress and implemented in FY 1981. It will provide an improved level of aviation readiness, fully fund the procurement of aviation DLRs and eliminate the aviation depot component rework backlog. In addition, the "buyer-seller" relationship established between the stock fund and its customers will motivate more efficient material management practices which are expected to save $422.5 million between FY 1985 and 1989.

FY 85 Sustainability

A credible military deterrent rests on the ability to stay the course -- to go when called and remain at the point of

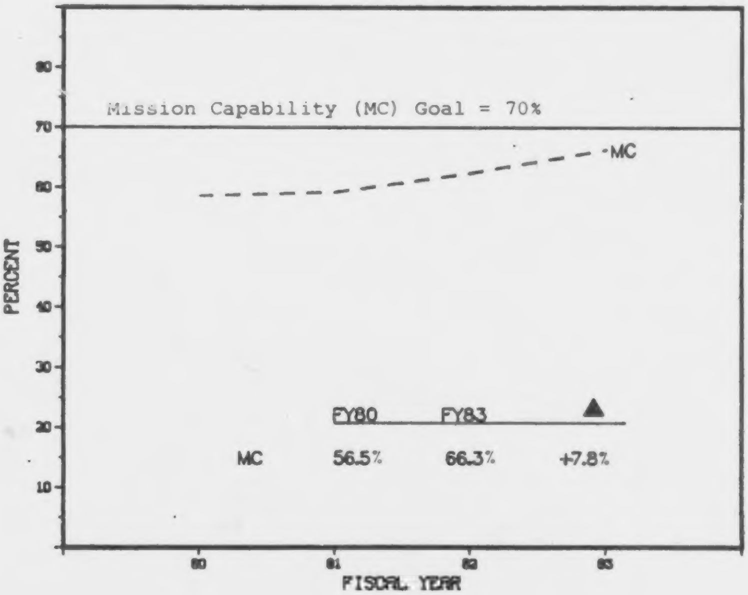

AIRCRAFT MATERIAL READINESS TRENDS
TOTAL FORCE

Figure 4

contention as long as it takes to reach a successful conclusion. Sustainability, the staying power of a force, is at the core of our maritime strategy, and crucial to building and maintaining naval forces which can be effective across the full range of potential conflict scenarios.

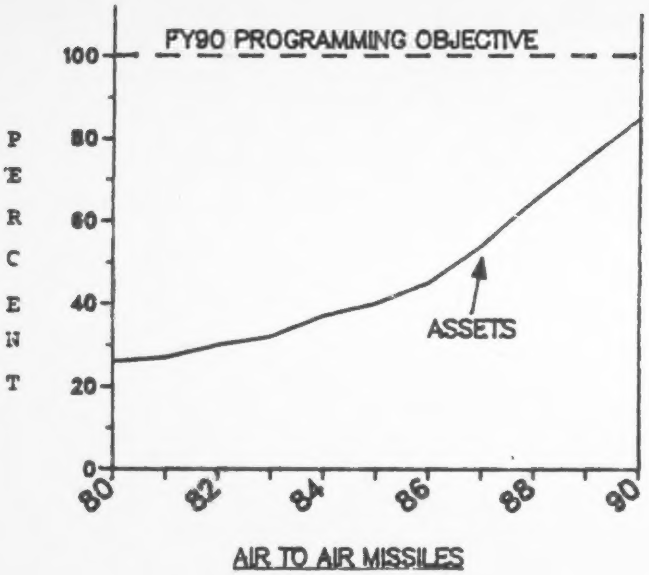
The past lack of sufficient funding for national defense resulted in long standing deficiencies in sustainability. In FY 81, renewed understanding of the global nature of the threat and the commensurate need to prepare for large scale extended conflict as well as limited confrontations caused more resources to be devoted to sustainability. We continue to recognize the necessity of providing for improved sustainability of naval forces.

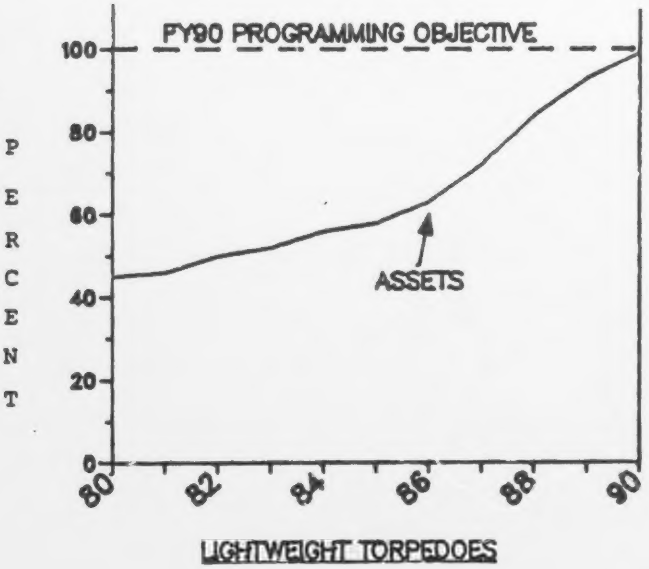
	YEARLY GROWTH	
	74-80	81-85
Sustainability Funding	2%	11%

The budget is again structured to reduce previously documented shortfalls and imbalances in the vital area of non-nuclear ordnance reserves. As an example, you can see in Figure 5 that there are significant shortages in air-to-air missiles and lightweight torpedoes. To remedy these deficiencies, we are continuing to buy increasing numbers of SPARROW, SIDEWINDER, and PHOENIX missiles as well as the latest version of the MK 46 torpedo. Another important example of our progress is the acceleration of the High Speed Anti-Radiation Missile (HARM) and Expendable Countermeasures procurements to improve platform survivability in both land attack and war-at-sea scenarios. Recent armed conflicts and incidents around the world have proven the wisdom of this decision.

Unfortunately, cross-decking of some categories of weapons to complete loadouts for our deployed forces is still common in a number of important ordnance areas. Inventories are improving but are not yet at levels to prevent this action. Part of this problem is due to the approximately two-year delay between funding and delivery of completed weapons. Continued Congressional support for adequate levels of ordnance will help to erase this long standing deficiency and allow achievement of prudent inventory levels.

With major worldwide security interests, separated by vast ocean expanses, the transport and support of U.S. military forces provide essential elements of deterrence. The major procurement expenses contained in our long range plan to improve sealift and strategic mobility have already been authorized in previous budget years. However, the FY 85 budget continues to emphasize support for these forces. After conversion, the SL-7 fleet of fast support ships will be placed under the operational control of the Military Sealift Command. There they will represent a significant addition to surge and general war mobilization capabilities. The Near Term Prepositioning Force now in being provides a credible deployment potential for Southwest Asia. Funding for the Maritime Prepositioning Ships continues with deliveries of ten expected in the coming fiscal year. Our overall ability to provide combat forces for the containment of crises worldwide will be improved as a result of these programs.





NOTE: ASSETS ADJUSTED TO REFLECT LOWER Pk OF OLDER MODELS

Figure 5

FY 85 Modernization

FY 85 modernization resources have been allocated in a balanced approach to provide the most effective and necessary capabilities to keep pace with the threat. In particular, the Navy has determined and articulated an investment and procurement strategy to assure that carrier battle groups can defeat the projected coordinated air threat through the 1990s and ensure connectivity with our allies. That strategy is based upon a comprehensive Outer Air Battle Study, drawing on a number of resources including the Center for Naval Analyses. This definitive study derives requirements and identifies technology alternatives and capability objectives. Using this guideline, we can define the best technical approach for developing the weapons and supporting sensor C^3 procurement necessary to continue to improve both offensive and defensive AAW capability for the fleet. The money requested for research and development as well as procurement in the modernization and force level accounts has been carefully programed to ensure consistency with this comprehensive plan.

Emphasis on the distribution of offensive firepower at sea continues with funding for the development and deployment of the TOMAHAWK missile. The additional range and targeting flexibility of this missile will provide a significantly increased strike and stand-off capability, and with it, expanded control of ocean and adjacent land spaces.

The Vertical Launching System (VLS) remains part of the initial procurement package of the current version of the CG-47 class cruisers, and continued funding for the inclusion of VLS in the DD-963, DDG-51, and SSN-688 class ships is also programed. The synergistic combination of the TOMAHAWK missile and Vertical Launching Systems will provide the firepower to increase dramatically overall fleet capability against heavily defended, long range sea and land targets.

Development funding to make the MK 48 Advanced Capabilities (ADCAP) torpedo operational in FY 86 is high on the priority list. The performance improvements incorporated in this version of the MK 48 are absolutely necessary to counter a rapidly improving threat. This program will be critical in executing the maritime strategy and must proceed on schedule. Other vital improvements funded in the ASW task area for FY 85 include the acquisition of SURTASS platforms and planned replacement of the SH-3H carrier based helo. Procurement of the P-3C UPDATE III aircraft will ensure that maritime patrol forces maintain an edge on the quieter threat. Soviet progress in submarine design and projected deliveries have caused us to place high priority in the near and mid-term on combat capability enhancement of the SSN 688 class, both in new construction and through backfit; and, in the longer term, on the development of a new generation SSN. These programs are designed to maintain an acoustic advantage over the threat and improve our ability to fight in an increasingly hostile environment. This phased modernization is essential to executing the maritime strategy.

New surface platform systems, such as the AN/SQS-53B surface sonar, the LAMPS MK III ASW helo, and the AN/SQR-19 tactical towed array have completed development and entered production. In addition, further improvements to the AN/SQS-53 series surface sonar continue with the full-scale engineering development effort of the AN/SQS-53C which includes improved active performance and increased reliability and maintainability. The increasing Soviet submarine torpedo threat has focused our attention on the need for improved torpedo defense of our battle groups and logistic and amphibious forces. The Navy has embarked on a Surface Ship

Torpedo Defense program that will detect and counter that significant threat.

The TRIDENT II missile program will allow timely introduction of modern missiles into the operating forces as an integral part of the President's strategic modernization plan. Communications improvements programed for our strategic forces to ensure strategic connectivity for our sea-based deterrent force are high priority items. Extremely Low Frequency (ELF) transmitting sites in Wisconsin and Michigan are now under construction and an improved airborne communications capability (ECX) is under development. These connectivity enhancements are crucial to the continued effectiveness of a key element in our overall strategic deterrent posture.

FY 85 funding supports the continued modernization of the amphibious forces through construction of two new LSD-41 class landing ships and continued procurement of air cushion landing craft. These landing craft are capable of transporting Marine Corps forces ashore at speeds up to 40 knots. The JVX, another important program in the Amphibious Force modernization plan continues in development. We need this program for timely replacement of the aging medium lift assault force, and for its potential application to other important warfare tasks.

Modernization of reserve forces will continue at a quickening pace with the introduction of FFG-7 ships into the surface force and the upgrading of the two reserve air wings to modern fleet capable aircraft such as the F/A-18 and A-7E. Modernization of the reserve maritime patrol aircraft force continues with completion of TACNAVMOD installations still scheduled for FY 86. The completion of 33 shipboard simulators and 35 Damage Control Trainers at reserve centers around the country this fiscal year will provide more realistic training. An additional two shipboard simulators and 12 Damage Control Trainers are planned for FY 85. In particular, remote reserve centers located away from access to active fleet training centers and operating ships will benefit greatly.

The FY 85 budget contains proposals for important C^3 and electronic warfare enhancements. Navy Battle Group Command and Control as well as Joint Service and international interoperability is being modernized to keep pace with the threat by the development of JTIDS. The force multiplication capability of electronic warfare was realized by the British during the Falkland crisis and by the Israelis during the Syrian encounters in the Bekaa Valley. The nature of the threat demands that we also improve our capability to target and engage the enemy at greater stand-off ranges. Enhanced electronic surveillance, warning, and targeting systems must be widely distrubted in our forces. Your assistance in preserving these initiatives is important.

In a field of increasing interest today, computer technology, the Navy is moving forward smartly. The AN/UYK-44 microprocessors and microcomputers will enter service this year. Following extensive operational testing this year, the AN/UYK-43 computer will achieve an Initial Operational Capability next year. These two tactical computers will provide significant cost savings through standardization of computer hardware for use in multiple weapon systems. A Pre-Planned Product Improvement program has been established to adapt these computers to emerging technology. In addition, the Navy will begin a program in FY 85 to investigate and validate technology to determine the most beneficial and cost effective approach for development of advanced computers for the 1990's.

FY 85 Force Levels

From FY 74 to FY 80, force structure funding in the Navy budget remained essentially level but well below that needed to maintain even the degraded force structure of the 70's. With your support, the Navy has been able in previous budgets to program resources to achieve the modest expansion to 600 ships necessary to support our national strategy. As indicated in Figure 6, the proposed 85 Budget will maintain a procurement pace to support those objectives.

We are requesting funding this year for 23 new ships and six conversions and modernizations of existing ships. New construction includes: one TRIDENT submarine, four LOS ANGELES class attack submarines, three TICONDEROGA class cruisers, the lead ship of the ARLEIGH BURKE Class (DDG-51) destroyer, two LSD 41 class amphibious ships, four MCM mine warfare ships for the Naval Reserve, three modern oilers, three SURTASS platforms, and two ocean surveying ships (TAGS).

The FY 85 proposal contains two very important modernizations: the SLEP for the carrier INDEPENDENCE, and reactivation of the third battleship MISSOURI. Each of these programs will cost a fraction of what would be necessary to procure new ships with the same capability.

The FY 85 budget includes funding for the lead ship of the ARLEIGH BURKE class destroyer program, designed both to replace existing guided missile destroyers which face obsolescence in the late 1980's, and to ensure a modern, balanced surface force capability well beyond the turn of the century. DDG-51 is a critical element in the Navy's plan to distribute offensive power at sea and execute the maritime strategy so central to our national security. A general purpose destroyer, the ARLEIGH BURKE class DDG has been carefully developed for planned employment with any kind of naval force. In the battle group role, she complements the AAW capability of CG-47 and the ASW capability of DD-963, while her cruise missile suite supplements the surface and land attack capability of CV strike aircraft.

In harmony with the traditional and proven concept of destroyer operation, ARLEIGH BURKE will be a multi-purpose ship capable of projecting power simultaneously in the four dimensions of naval warfare including the destruction of enemy cruise

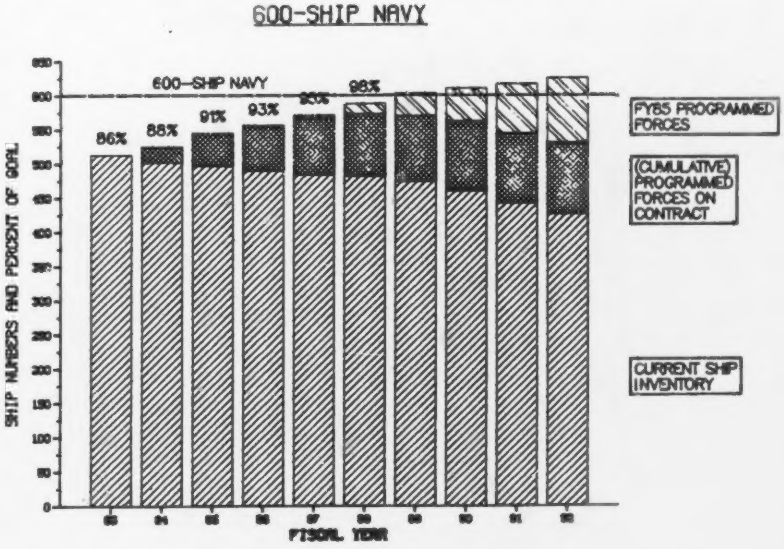
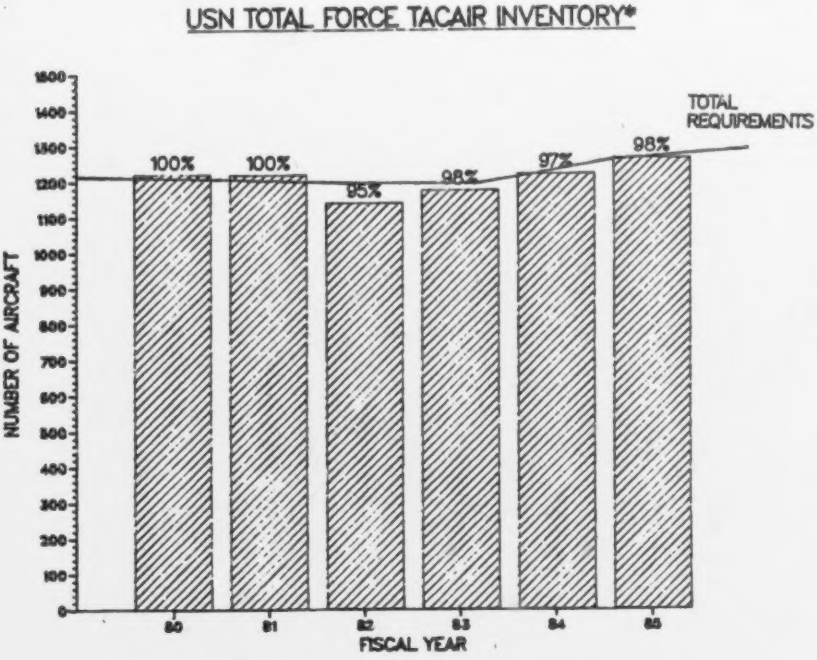


Figure 6

missiles and aircraft, defeating enemy surface ships, prevailing over enemy submarines, and attacking land targets. Flexibility in operational scheduling and multimission capability of general purpose destroyers has been proven over the years both in conflict and in peace. That same flexibility is needed for the future. ARLEIGH BURKE Class ships are midway between modern frigates and cruisers in capability and also midway between these two ship types in follow-ship cost. They are affordable in the numbers required, and cost effective in terms of maintaining force levels and surface combatant modernization plans.

Aircraft procurement for FY 85 will maintain aircraft inventories appropriate to current and projected ship force levels. The total number of aircraft requested this year is 287. Procurement of the F/A-18, with its versatile air defense and attack roles constitutes a major portion of that program. Continuation of AV-8B funding is included to ensure timely modernization of Marine Corps light attack forces, as is funding for the highly capable F-14, A-6E, and EA-6B. Procurement of the SH-60B LAMPS MK III helicopter will allow us to realize full benefit from the integrated ASW suites installed on the DDG-963 and CG-47 ship classes.

The aircraft procurement program has been carefully balanced to support the increase to 15 carrier battle groups and 14 active deployable carrier air wings. Two upgraded Naval Reserve airwings will meet the mobilization requirements by filling the decks of the fifteenth carrier and that carrier which is undergoing SLEP. As Figure 7 indicates, our program will build appropriate tactical air forces for the total force. The number of aircraft requested is slightly below that required to provide adequate force levels without suffering any increase in overall force age. Congressional support of the entire aircraft procurement program is necessary if the Navy is to achieve force level objectives in an orderly and balanced manner. The striking power of the fleet and its ability to take the offensive can only be maintained with consistent aircraft procurement.



* DOES NOT INCLUDE USMC

Figure 7

CONCLUSION

The Navy's rapid, effective response to numerous National Command Authority taskings during 1983 underscored the seriousness of American purpose where and when needed, and provided a clear and vivid demonstration of the Navy's value during peacetime. The mobility and flexibility of naval forces provide a unique national resource in dealing with crises and conflicts of widely varying duration and intensity. I have described a maritime strategy which supports the national military strategy and meets the objectives set forth in the Defense Guidance. It is also a dynamic concept of operations which we continually test and refine through wargaming, exercises and everyday operations in support of U.S. policy.

The FY 85 budget is one year of a carefully considered program to maximize the Navy's contribution to U.S. security objectives with available resources. The readiness funds requested in this budget will enable the Navy to continue its everyday role as a tool of national policy, demonstrating U.S. commitment and responding to urgent crises as they occur. The men and women we recruit, train and retain will man our ships today -- and provide the base for tomorrow's Navy. The resources you authorize for sustainability will guarantee us the stockpiles and reserve forces to realize our mobilization potential, and ensure that no nation can defeat the United States by simply outlasting us.

I have described in some detail the nature of the challenge faced by the United States and the U.S. Navy. The funds requested for force structure and modernization are essential if we are to compete over the long term. The size of threat continues to increase, and the modest force structure growth we have planned is only prudent. At the same time, the enemy's sophistication has increased dramatically and we must modernize the Navy if we are to continue to be able to prevail in increasingly complex wartime environments.

The budget you have before you is the culmination of a comprehensive, iterative strategy and program building process to ensure that the Navy can fulfill its role in support of national policy -- today, tomorrow and in the future. The continued support of Congress and the visible pride of the American people have been instrumental in providing Navy men and women with both material resources and moral strength, the sine qua non of effective military forces. With this strong support, the Navy has demonstrated that seapower can make the strategic difference. The events of the past year provide eloquent testimony to support President Reagan's admonition in his State of the Union address: "We dare not shirk our responsibility to keep America free, secure, and at peace." Congressional support for the Navy's FY 85 budget will go a long way towards fulfilling this responsibility in a prudent and cost-efficient manner.

SUMMARY OF U.S. NAVAL FORCES
(as of 1 FEB 1984)

Strategic Forces		
SSBN	34	
Support	6	
Subtotal	40	
Total Strategic Forces		40
Battle Forces		
Aircraft Carriers	9	
CVN	4	
Subtotal	13	

Surface Combatants		
BB	1	
CG	19	
CGN	9	
DD	31	
DDG	37	
FF	53	
FFG	39	
Subtotal	189	
Submarines		
SS	4	
SSN	93	
Subtotal	97	
Amphibious Warfare	61	
Mobile Logistic Ships	53	
Patrol Combatants	6	
Mine Warfare	3	
Subtotal	123	
Total Battle Forces		422
Support Forces		
Mobile Logistic	21	
Support Ships	22	
Subtotal	43	
Total Support Forces		43
Mobilization Forces (Category A)		
Surface Combatants (DD/FF)	8	
Amphibious Warfare Ships	2	
Subtotal	10	
Total Mobilization Forces		10
TOTAL U.S. NAVAL FORCES		515

SUMMARY OF U.S. NAVY AIRCRAFT
(as of 1 DEC 83)

Fighter/Attack	60
Fighter	702
Attack	1014
Anti-Submarine	169
Patrol	441
Warning	142
Transport	141
Trainers	1117
Special Mission	6
Observation	19
Utility	87
Helicopters	694
Drones	39
Total Aircraft	4631

NAVY FIVE YEAR AIRCRAFT PROCUREMENT PLAN

TYPE	FY-85	FY-86	FY-87	FY-88	FY-89
A-6E	6				
EA-6B	6	6	6	6	6
AV-8B	32	46	47	48	60
F-14A/D	24	24	12	12	24
F/A-18	84	102	120	120	120
CH-53E	10	14	14	14	14
AH-1T	22	22			
SH-60B	18	18	18	18	18
P-3C	9	9	9	9	9
RP-3D				1	1
JVX					18
E-2C	6	6	6	6	6
SH-2F	6				
C-9					
UC-12B	12	24	12		
C-2	8	8	9		
T-34C		114			
T-44			15		
ADVERSARY	8	12			
T-45A				8	24
TH-57	36				
KC-130R					
E-6A		3	3	3	3
FEWSG					
Total	287	408	271	245	303

NAVY FIVE YEAR CONSTRUCTION/CONVERSION PLAN

I. NEW CONSTRUCTION	FY-85	FY-86	FY-87	FY-88	FY-89
TRIDENT	1	1	1	1	1
SSN-688	4	4	4	4	4
NEW DESIGN SSN					1
CG-47	3	3	3	2	2
DDG-51	1		3	5	5
LSD-41	2	2	2		
LHD-1		1		1	1
LPDX				2	2
MCM	4	4	1		
MSH		4	4	4	4
AE		1	1	1	1
AOE		1		1	1
AR					1
TAGOS	3	3			
TAGS	2				
TAO	3	3	3	3	2
LCAC	(9)	(12)	(12)	(12)	(12)
Total	23	27	22	24	25

II. CONVERSION/MODERNIZATION	FY-85	FY-86	FY-87	FY-88	FY-89
CV SLEP	1		1		
BB REACTIVATION	1		1		
LPD-4 SLEP			1	3	3
AG		1			
AO (JUMBO)				1	2
TACS	2				
TAGM (CONV)			1		
TAK (FBM) (CONV)	1				
TAVB	1	1			
Total	6	2	4	4	5

SUMMARY STATEMENT OF GEN. P. X. KELLEY

COMMANDANT OF THE MARINE CORPS

Mr. Chairman, distinguished members of the Committee

In this, my first annual report to the Congress, it is my privilege to report to you today on the current and future posture of our United States Marine Corps.

As far as our current posture is concerned, I am pleased to report that it continues to be of the highest order. The Navy/Marine Corps Team remains our Nation's premier force-in-readiness. Marines and sailors continue to contain and confront the challenges to America's interests with pride and dedication which remains the very essence of their service. However, I would invite your attention to the historical fact that their superb performance is equally dependent upon the steadfast support of the American people and the Congress of the United States. In short, your Marines continue to strive to be deserving of America's trust and confidence.

For the six specific Marine Corps appropriations, we have requested $8.9 billion in fiscal year (FY) 1985, a request which constitutes 4.1 percent real growth. The major elements of the budget are:

FISCAL YEAR 1985 BUDGET REQUEST
($ in millions)

APPROPRIATION	FY 1984	FY 1985
Military Personnel, Marine Corps	3,525.1	4,845.9
Reserve Personnel, Marine Corps	179.6	269.5
Operation & Maintenance, Marine Corps	1,563.1	1,683.1
Operation & Maintenance, Marine Corps Reserve	52.3	58.6
Procurement, Marine Corps	1,741.3	1,978.6
Marine Corps Stock Fund	20.8	34.9
	7,082.2	8,870.6

The request is approximately 9 percent of the Department of the Navy's budget, and less than 3 percent of the Department of Defense's. Including Navy support to the Marine Corps, our budget request represents approximately 5 percent of the Defense budget. The Marine Corps has always maintained a reputation for frugality while playing a significant role in support of our country's national security objectives. This budget, as presented to you, reflects the Marine Corps' continuing effort to ensure a significant contribution to the national defense while consuming a relatively small amount of resources. I am keenly aware of congressional concern with the proper utilization of these resources and I assure you that I personally share those concerns. We Marines will continue to seek economies and efficiencies in all facets of our operations to ensure that our resources are utilized frugally and effectively.

MANPOWER

I now wish to turn to our most important program -- Marines and their families. Our first priority continues to be the accession and retention of the Nation's finest young men and women. For FY 1985, our manpower request calls for an end strength of 199,500 - an increase of 2,900. We have considered each increase carefully and have programmed them fully in the active force because they are necessary to support our global commitments.

Success in recruiting quality Marines has been achieved in part, by continuing to assign our very best Marines to recruiting duty. Quality Marine recruiters attract quality young people who, in turn, represent our future. FY 1983, a banner year for recruiting, surpassed all our numerical goals. The quality has never been higher. Continuing at this pace, we will achieve one of our major objectives: to have sufficient high school graduates in the upper AFQT ranges to meet our needs not only for high technology operators, but for intelligent individuals qualified to be noncommissioned officers.

Among the challenges facing all Services is retention; therefore, reenlistment of proven, quality Marines is another key part of our manpower program. A continuing concern, however, is our ability to retain Marines with skills and experience needed to overcome critical shortages. The Selective Reenlistment Bonus Program is an essential tool for filling these shortages. The program is working and it is cost-effective.

Marines have always served with unselfish devotion. Supporting these Marines, often with little or no recognition, are their families who rely on the Marine institution for personal support. Our institutional support -- a fair, reliable compensation system, medical care, commissaries and exchanges -- is vital to enabling them to bear hardships they have learned to accept.

First, pay and compensation for Marines and their families has not kept abreast of the cost living. Comparability with the private sector must be achieved and maintained if we are to resolve once and for all the issue of military pay adequacy. To accomplish this, linkage is required, such as the Employment Cost Index (ECI).

Equally as important as compensation are quality-of-life initiatives which directly affect retention. Our initiatives embrace a wide variety of programs reflecting the Marine Corps' commitment to improving the human dimensions of military service. We must remain committed to sustaining and, ultimately, improving the current level and quality of the programs afforded military families.

In FY 1985, the Marine Corps is requesting a total of 21,839 civilians. This request only satisfies minimum requirements. In order to provide maximum efficiency and avoid costly duplication of effort, military and civilian manpower resources are fully integrated.

An area of particular interest is leadership -- since it represents the very foundation on which the Corps stands. Your Marines are unique people who deserve the best leadership available and we remain dedicated to providing that leadership at all levels. Our emphasis on quality Marines and competent, professional leadership will continue to provide the Nation with a talented, efficient force that can carry out its mission.

OPERATIONS

The FY 1985 Operation and Maintenance, Marine Corps (O&MMC) request of $1,683.1 million is intended to accomplish the Marine Corps' top operational priority -- readiness. There is real growth of 4.1 percent in this appropriation over the FY 1984 funding level.

Our combat readiness is the product of numerous elements. The key element in the readiness equation continues to be training. Realistic, mission-oriented training that supports the missions of our force commanders is our highest training priority. The successful training of the individual Marine is the foundation upon which our collective effort is built. The increase of $11.4 million dollars for training in FY 1985 is a direct reflection of the emphasis we give to the preparation of our Marines.

In addition to training, maritime and land pre-positioning programs (+$24.4 million), equipment maintenance (+$15 million) and various FMF support programs (+$10.1 million) represent other areas of major funding increases in our FY 1985 O&MMC request.

PROCUREMENT

Procurement funding of $1.98 billion, $237.3 million over the FY 1984 estimate, achieves an important balance among readiness, sustainability, and modernization. $141.9 million of the increase represents real program growth of 7.7 percent.

Tactics, the equation by which we close with and destroy the enemy, is the function of three complementary factors: mobility, firepower, and command and control. Programs contained in our procurement request provide the best balance between these factors and thereby enhance our ability to respond to national commitments.

Several key programs contained in the FY 1984 budget, and approved by Congress, are continued and/or completed in the Marine Corps' FY 1985 budget request. Procurement of the LVT7A1 and the Light Armored Vehicle (LAV) will be completed. The addition of these assets will greatly reduce our vulnerability during critical ship-to-shore movement and will improve our mobility and firepower on the battlefield. Service Life Extension of the LVT7s will also be completed this year and will extend the service life of these assualt vehicles into the 1990s.

Infantry firepower improvements started in previous years are sustained with additional purchases of the Squad Automatic Weapon (SAW), the M16A2 rifle, the MK-19 Machine Gun, the Shoulder Launched Multipurpose Assault Weapon (SMAW), and the procurement of the new Personal Defense Weapon, to name a few.

While firepower provides the muscle for any fighting force, our third factor, command and control systems provides the nerve center and brains. While some command and control systems are currently in production, the majority are nearing the final stages of development. One such system, for example, is the Position Location Reporting System (PLRS). It is an automatic tactical command control system which provides commanders with their own location and the position and identification of all PLRS equipped units. It is also a navigational tool.

RESERVES

The Corps relies heavily on a fully-trained and capable reserve component to complement its active force. They provide one-fourth of the total structure and one-third of the Corps' total manpower, trained and ready in the event of mobilization. The FY 1985 budget request contains $328.1 million to finance the reserve program. Contained within this request is $269.5 million for Reserve Personnel, Marine Corps. This represents real growth of 10.9 percent and results from average end strength increases in Selected Marine Corps Reserve (SMCR), Full Time Support (FTS) personnel, and non-prior service recruits. Average strength increases are critical to the support of new units in the structure, support of the Fourth Marine Aircraft Wings' assumption of contingency missions and support of new and additional equipment in SMCR units. Continuation of these efforts will result in achieving a goal of 100 percent manning of authorized reserve structure in FY 1986. The Operation and Maintenance, Marine Corps Reserve appropriation increases by $6.3 million which reflects 7.3 percent real growth. Major areas of increase include training enhancements, equipment readiness and individual reserve mobilization. Marine Corps "Total Force" goals mandate structuring, equipping, and modernizing the reserve in such a fashion that is remains a viable fighting force. With the continued support of Congress, the Corps will proceed toward its objective of full wartime equipment and sustainability for the Reserves.

NAVY SUPPORT

The Navy continues to provide the Marine Corps with essential support. Four areas of this support are particularly important: Amphibious Lift, Aviation, Naval Surface Fire Support, and Medical Support.

Our ability to respond to crises -- decisively and credibly -- is a direct function of our ability to get to where we are needed and to get there on time. In that respect, the efforts of the Department of the Navy (DON) in support of the national goal of regaining clear maritime superiority -- which includes programs essential to amphibious warfare -- are strongly supported. The Navy's amphibious shipbuilding program promises revitalization of the amphibious lift capability needed to support and implement the maritime strategy.

Perhaps the most singularly important event in the field of amphibious matters was the completion of the DON Long Term Amphibious Lift Requirement and Optimum Ship Mix Study. The study has resulted in an equation which matches a fully combat-capable Marine Corps assault force with a least-cost mix of ships, land craft, and helicopters, while providing the closest possible balance between amphibious lift requirements of the Marine Corps and the lift capability of the Navy.

The Marine Corps applauds the balanced, coordinated approach the Navy has taken in building amphibious ships. Contained within this year's defense appropriation are two more LSD-41 Class ships, continuation of fabrication of the first ship of the LHD-1 Class, service life extension programmed for our present LPD-4 Class ships, procurement of an additional nine (9) Landing Craft Air Cushion (LCAC) and one (1) Aviation Logistics Support Ship (TAVB). Continued progress in the area of amphibious shipbuilding is essential if the Marine Corps is going to be capable of contributing to the national maritime strategy.

The Navy's surface action groups, built around the IOWA class battleships, are designed to function across the entire spectrum of naval warfare and in support of forcible entry and power projection through amphibious warfare. Reactivation of the battleship constitutes a major improvement in naval surface fire support and I strongly encourage the reactivation of the remaining battleships.

Finally, the Navy has embarked on a program to provide dedicated afloat medical support of our forces through the Hospital Ship program. The Corps' global mission requires a degree of medical support that can be met only by hospital ships having the capability to go where the Corps goes and being ready when the first casualty occurs. The Marine Corps applauds and supports the efforts of the Navy's health planners and solicits your support in assuring that the Navy achieves its medical support goals.

Aviation programs include the AV-8B, the F/A-18, JVX, CH-53E, and the AH-1T. The AV-8B Harrier program continues to be the key element in the modernization of our light-attack force. This year's request asks for thirty-two (32) of these unique V/STOL aircraft. With your continued strong support, introduction of the AV-8B will result in more effective and responsive close air support for Marines on the ground. The F/A-18 remains the Corps' most potent anti-air weapon. Eighty-four (84) F/A-18s are requested by the DON in FY 1985. Modernization efforts for our medium-lift assault transport are embodied in the JVX tilt rotor program. JVX promises an unprecedented advance for the projection of seapower and quantum leap in both strategic mobility and tactical flexibility. The CH-53E continues to prove its worth daily, and adds significant depth to our tactical mobility. With DON procurement of the eight (8) aircraft in FY 1985, together with those obtained in FY 1984 and current assets, the Marine Corps will be able to equip three (3) squadrons. The AH-1T Sea Cobra is one our most versatile ordnance delivery platforms. The Cobra, as a result of its versatility, remains our most heavily committed aviation asset.

SUMMARY

Our FY 85 budget request is a forthright appraisal of our resource requirements for the next fiscal year. It represents a sound and cost-effective investment in national security. Our intention is to continue those vital programs approved by Congress in the past and focus on improvements in readiness and sustainability in order to reestablish this Nation's clear maritime superiority.

In the final analysis, however, the establishment and effective exercise of Seapower is the function of Marines and Sailors -- quality personnel with the determination and spirit to influence the destiny of this Nation. With the continued support of the Congress and the American people, they will continue to positively influence this Nation's destiny and, in so doing, the destiny of the free world. Thank you.

PREPARED STATEMENT

Mr. Chairman, distinguished members of the Committee:

It is my privilege to report to you today on the current and future posture of our United States Marine Corps.

As far as our current posture is concerned, I am pleased to report that it continues to be of the highest order. The Navy/Marine Corps Team remains our Nation's premier force-in-readiness. Marines and sailors of the Naval Service continue to contain and, wherever and whenever necessary, to confront the challenges to America's interests. Of particular importance, they continue to do so with the pride and the dedication which remain the very essence of their service.

That they are capable of performing so superbly is a tribute to their spirit and professionalism; however, I would like to invite your attention to the historical fact that their superb performance is equally dependent upon the steadfast support of the American people and the Congress of the United States. As has traditionally been true of your Marines, we recognize and honor the vital necessity of that mutual relationship and place the highest value on the continuation of that support. In short, your Marines continue to strive to be deserving of America's trust and confidence.

In this, my first annual report to the Congress, I wish to share with you my views relative to:

- The Nation's maritime strategy and the role of the Navy/Marine Corps Team in implementing that strategy.
- The state of your Corps--where we have been, where we are going, and how we intend to get there.
- Budgetary considerations.
- And, most importantly, Marines themselves--what it is today that sets them apart as a fighting force and as individuals.

As I view the unfolding of events in our dynamic and ever-changing world, I remain steadfast in my conviction that this Nation's economic prosperity and political vitality and, therefore, her national security, are inextricably linked to our ability to control the seas--both those which provide the barrier between America and the Eurasian continent and those which serve as oceanic lifelines between America and her allies and between America and the vital strategic resources her economy requires.

Recognizing the validity of this precept, the national leadership has adopted and is supporting a maritime strategy--a strategy designed to assure the United States, and her allies, a clear margin of maritime superiority at the points of decision.

Militarily, we must recognize that implementation of an effective maritime strategy requires balanced naval forces--forces capable of influencing events on the seas and of extending that influence ashore for both offensive and defensive purposes. A balanced maritime capability must provide not only the formidable air, surface, and subsurface dimensions of naval warfare, but also the ground/air power projection dimension unique to amphibious forces.

Carrier battle groups, and their attendant surface and subsurface support ships, provide our major capability for sea control--a capability presently unmatched among the world's navies, although rapidly being challenged by Soviet naval expansion. Similarly, our surface action groups, built around the revitalized IOWA Class battleships, are designed to function across the entire spectrum of naval warfare--surface, subsurface, antiair--and in support of forcible entry and power projection through amphibious warfare. If these capabilities are to remain effective, they must be nurtured and expanded to provide a credible three-ocean capability to satisfy our global requirements.

There is one area of naval warfare in which this Nation possesses a decided advantage vis-a-vis the Soviet Union. It rests in the power projection capabilities inherent with amphibious forces supported by carrier battle and surface action groups. Indeed, recent Soviet efforts to expand and enhance their amphibious force projection capabilities indicate that they fully appreciate the economy, flexibility, and tactical utility attendant to such forces. Accepting these observations as valid, and recognizing the need for naval forces capable of containing Soviet expansion and deterring Soviet aggression, it is then incumbent upon the national leadership to continue to take the necessary steps to ensure that America possesses the requisite margin of maritime superiority--and significant steps are, indeed, being taken.

ENHANCEMENT PROGRAMS

Our ability to respond to crises--decisively and credibly--is a direct function of our ability to get to where we are needed and to get there on time. In that respect, the efforts of the Department of the Navy (DON) in support of the national goal of regaining clear maritime superiority--which include programs essential to amphibious warfare--are strongly supported. The

Navy's amphibious shipbuilding program promises revitalization of the amphibious lift capability needed to support and implement the maritime strategy.

Perhaps the most singularly important event in the field of amphibious matters was the completion of the DON Long Term Amphibious Lift Requirement and Optimum Ship Mix Study. The Navy/Marine Corps team came together for that study in response to concerns about the overall direction of the Navy's future amphibious shipbuilding programs and Marine Corps lift requirements. During the course of the study, the Marine Corps established a stabilized lift requirement statement that both defined and reduced the total lift for the assault echelons (AE) of a Marine Amphibious Force (MAF) and a Marine Amphibious Brigade (MAB). The point to be made here is that, although the assault echelon lift requirement was reduced in sheer bulk, the initial fighting punch of Marine assault forces has remained unchanged. One way to describe the real impact of this stabilized requirement might be to say that we are lean--but lethal.

The study has resulted in an equation which matches a fully combat-capable Marine Corps assault force with a least-cost mix of ships, landing craft, and helicopters, while providing the closest possible balance between amphibious lift requirements of the Marine Corps and the lift capability of the Navy.

The Marine Corps applauds the balanced, coordinated approach the Navy has taken in building amphibious ships. The gloomy predictions of years past, projecting massive block obsolescence of lift assets, have been replaced with not only solid programs but with hard steel on the building ways. The DON's mid-term objective is to provide sufficient ships to simultaneously lift the assault echelons of a MAF and a MAB. The current Navy shipbuilding plan fully meets these requirements. This plan maintains a steady building program to overcome the potential effect of amphibious ship block obsolescence in the out-years while, at the same time, increasing our overall lift capability.

USS WHIDBEY ISLAND, the lead ship of at least eight LSD-41 Class ships, has been launched and two more are on the building ways. One more LSD-41 Class ship has been authorized, with plans for two more in this year's defense appropriations and an additional two ships in FY86. Tentative design for a follow-on class, based on the LSD-41 hull but modified for cargo lift, is being finalized. The first ship of the LHD-1 Class--designed to support current and evolving amphibious warfare concepts into the next century--is scheduled for initial fabrication in September. Additionally, although not a new construction effort, our present LPD-4 Class of 11 ships is programmed for a service life extension that will contribute 15 years of continued fleet usefulness.

Central to the Marine Corps' contribution to the maritime strategy is amphibious warfare. Within the limits imposed by available shipping, the Marine Corps, in concert with the Navy, is striving to improve its mobility. The combat power of an amphibious task force is transported by amphibious ships; but the force's logistical sustainability is carried by merchantmen. Virtually 75 percent of the total landing force equipment and supplies will be loaded in merchant hulls. It is, therfore, vital that the required merchant and sealift ships be available for the support of amphibious operations.

The Merchant Marine is equally critical to sustaining maritime pre-positioning forces and extended land operations. Although the merchant fleet is modern and efficient, its inadequacy to support global commitments is cause for concern. In order to regenerate confidence in the merchant service, every effort must be made to guarantee its survival and growth. It would be desirable to see an expansion of the fleet, an expansion of the the manpower pool, and an improvement in the procedures for the timely call-up of ships in an emergency. In the meantime, we continue to pursue innovative initiatives to ensure our global responsiveness.

One such initiative is the pre-positioning of selected equipment and supplies in Norway. By pre-positioning only what is absolutely mission essential, and only that which is suitable for long-term storage, we will be able to reduce our response time to the critical northern flank of NATO from weeks to days. This response includes a Marine Air Ground Task Force (MAGTF) tailored to the mission, the threat, and, in this case, the unique environment of Norway. A MAB comprised of over 13,000 Marines and sailors and over 150 aircraft will, in a matter of days, stand ready to fight on Norwegian soil and sustain itselt for as long as 30 days. This will permit us to provide a highly credible alternative in measured response and deterrence to an area vital to both America's and NATO's interests--and to do so without a single Marine being posted on Norwegian soil.

It is a pleasure to report that, with Congressional support, the Norway pre-positioning program is in full swing. Norway has invested tremendous political capital and national resources in support of the program. Her contribution in host nation support alone has permitted us to greatly reduce our requirements. The necessary procurements, which are fully programmed through 1989, are proceeding smoothly and we continue to deliver supplies and equipment for storage. But, we are doing more than warehousing and maintaining this equipment. Operational planning is well underway, and the first exercise of the concept will occur in March of this year.

Another crisis-response enhancement, the Maritime Pre-positioning Ships (MPS) concept, is rapidly becoming a reality. This concept provides a significant new dimension in mobility, sustainability, and global response. During a crisis, Marines would be airlifted to a contingency area to link up with pre-positioned supplies and equipment and, subsequently, organize for combat. MPS provides a credible force of combined arms with selected combat equipment and 30 days of supply, available on call. Additionally, the program will assist in revitalizing our shipbuilding industry and the Merchant Marine, and will enhance our sealift capability.

The first of three MPS brigades will achieve an initial operating capability (IOC) later this year. The headquarters for that brigade has already been activated at Camp Lejeune, North Carolina. We plan for the second and third MPS brigades to become operational during FY85 and FY86, respectively. The third MPS task group will replace the Marine Corps' current contingent in the Near Term Pre-positioning Force, thereby further improving our responsiveness. Construction has already begun on 10 of the 13 cargo ships to support the MPS program.

An important associated initiative is the Aviation Logistic Support Ship (TAVB) program. The TAVB augments MPS and amphibious operations in several ways:

- Provides vital support to aviation combat elements through sealift of a partial, consolidated intermediate maintenance activity to a theater of operations.

- Permits early introduction of Landing Force aviation.

- Allows early release of carrier battle groups to other sea control or force projection missions.

Two TAVBs have been programmed and are expected to be operational during FY85 and FY86. These ships will be made available through austere modification of two, government-owned commercial ships.

Turning from strategic to tactical considerations, I would share one observation with the Committee. Tactics, the equation by which we close with and destroy the enemy, is the function of three complementary factors: mobility, firepower, and command and control. Our programs are designed to refine those factors and to guarantee a favorable solution to the equation. (A synopsis of major programs is provided in Appendix I.)

Having discussed the strategic aspects of mobility, I will turn now to the tactical. During the initial phase of an amphibious assault it is essential to rapidly build up combat power ashore. The Landing Craft Air Cushioned (LCAC) is well suited to that task. From 25 nautical miles offshore, LCACs can land more troops, tanks, vehicles, and artillery pieces in a given period than an equal number of conventional craft with only a 5 nautical mile turnaround. And, if need be, LCAC can carry its load across the beach. The benefit is both the rapid buildup of combat power ashore and the protective cushion of stand-off distance for amphibious ships. The over-the-horizon launch provides maximum flexibility to the amphibious commander's range of tactical options.

The IOC for the first six LCACs is 1986, which roughly coincides with fleet delivery of the first LSD-41. Two LCAC support bases are programmed--one at Camp Pendleton, California, and a second at Virginia Beach, Virginia.

Assault amphibian vehicles (AAV) serve to further reduce our vulnerability during the critical ship-to-shore movement and to improve mobility on the battlefield. As a result of the Service Life Extension Program, the assault amphibian vehicle's service life will be extended into the 1990s. During 1984, the first AAV unit will be completely equipped with the new LVT7A1. To support MPS forces, delivery of 327 new LVT7A1s will commence this fiscal year. Delivery of new production vehicles will be completed in December 1985, and the delivery of SLEP vehicles will be completed in June 1986. The Landing Vehicle Tracked Experimental (LVT(X)) is under development as a follow-on for the LVT7A1. LVT(X) will enhance our amphibious assault capability with increased firepower, improved armor, and a lower silhouette. The LVT(X) will complement future over-the-horizon capabilities as well as sustained operations ashore.

The CH-53E Super Stallion heavy-lift helicopter continues to prove its worth daily, and adds significant depth to our tactical mobility. We are presently operating two 16-plane squadrons, one at MCAS(H) Tustin, California, and one at MCAS(H) New River, North Carolina. Both squadrons regularly support Marine ground units. Our third tactical squadron (HMH-466) will stand up early in FY85. The aircraft procured in FY84 and FY85, together with our current assets, will equip three Marine squadrons. We have a requirement for three additional squadrons to support amphibious operations. This additional capability is necessary to airlift the M198 Howitzer, its prime mover, the ground combat element's heavy equipment, the Field Logistics Support System (FLS), and other associated equipment.

Modernization efforts for our medium-lift assault transport are embodied in the JVX tilt rotor program. In addition to averting a critical shortfall in medium-lift transport, JVX promises an unprecedented advance for the projection of seapower and a quantum leap in both strategic mobility and tactical flexibility. Its global self-deployability provides the responsiveness required to rapidly marry-up airlifted Marines with pre-positioned equipment in Norway and MPS. To the tactical commander, the tilt rotor represents an advantage in battlefield mobility and flexibility previously unavailable. JVX meets the need for increased stand-off distances thereby further enhancing over-the-horizon assaults with its 250 knot speed, high transport productivity and its ability to execute a two wave assault at a 50-110 nautical mile radius without refueling. Capable of operating from remote friendly assembly areas as well as all present or planned amphibious ships, its versatility complements both the LCAC and CH-53E. The potential for rapid strategic response, tactical flexibility and surprise, as well as future civil applications, appear to be unlimited for this breakthrough in American technology being developed by the Naval Service for all Services.

The second factor in the tactical equation is firepower. Major restructuring of our ground units has resulted in MAGTFs that will possess a great deal more "punch per pound." As our smaller, firepower-intensive infantry battalions close with the enemy by LCAC, AAV, helicopter, and JVX, they will generate far greater shock action as a result of the introduction of new weapons systems. Each newly reorganized infantry battalion will be equipped with new personal defense weapons, improved M16A2 rifles, a new squad automatic weapon, a shoulder-launched multipurpose assault weapon, the MK-19 40mm heavy machine gun, a new lightweight company mortar, and the improved M60 machine gun.

The light armored vehicle (LAV) will add depth and versatility on the battlefield as well as firepower. LAV battalions, soon to be organic to each Marine division, will provide a mobile, hard-hitting, maneuver element to the MAGTF commander's arsenal of capabilities. LAV battalions will be capable of being transported to an objective area strategically, by sea and air, and tactically, by helicopter. The first light armored vehicle company was activated in July 1983. A battalion of 55 LAV-25s will be activated in FY84 at Camp Lejeune, North Carolina. Currently, we plan that each light armored vehicle battalion will have 145 vehicles as other mission role vehicles are introduced.

Battlefields of the future will be dense with both tanks and armored fighting vehicles. Recognizing this, we are deeply involved in programs to further increase our anti-armor capabilities. Our heavy anti-armor capability, TOW, will double in number and each weapon will have a night sight. Additionally, TOW has been improved with a 5" warhead and its range extended to 3750 meters. A second-phase improvement of TOW, with a 6" warhead capable of defeating any known enemy tank, will offer increased range and will provide electrical optical countermeasures (EOCM).

DRAGON, a medium anti-armor weapon organic to infantry battalions, has been increased in number from 24 to 32 weapons per battalion. One-half of these weapons are soon to have night sights. Also adding firepower to the infantry battalion will be the vehicle or ground-mounted MK-19, 40mm heavy machine gun, capable of defeating armored fighting vehicles at 2200 meters.

Perhaps the most effective anti-armor weapon is the tank. The Marine Corps' current main battle tank, the M60A1, will reach the end of its service life in the mid 1990s. In order to have a tank that can survive against and defeat the present and projected threat, the Marine Corps will program for the M1E1, following satisfactory completion of operational testing in the amphibious environment.

In view of the magnitude of the Soviet armor threat, Marine Aviation has devoted a great deal of attention to precision guided munitions (PGMs) which can successfully engage enemy armor at stand-off distances. Hellfire and Laser Maverick, our close air support PGMs, are two such weapons systems that can meet the threat head-on and defeat it without unacceptable aircraft attrition.

Additional developments in aviation ordnance include the 25mm gun pod, designed for both anti-air and anti-armor missions; the Imaging Infrared Maverick missile for interdiction missions; and GATOR, an air-deliverable, scatterable mine which will deny, canalize, and destroy armor.

One of our most versatile ordnance delivery platforms is the AH-1T Sea Cobra. A multi-mission aircraft, the Sea Cobra provides armed escort for our troop assault aircraft, anti-armor capability with both TOW and Hellfire, and close-in fire support for ground troops with its 20mm gun and forward firing rockets. Modifications to the basic AH-1T in order to develop these varied capabilities resulted in a 1000 pound weight growth, which left the aircraft markedly underpowered. Congressional action in FY84 has permitted timely development of the GE T-700 engine, presently undergoing test and evaluation, which could provide a quantum increase in both operational capability and safety in our FY85/FY86 production Cobras. As a result of its versatility, the Cobra remains our most heavily committed aviation asset, and FY85/FY86 procurement is vital to alleviate critical inventory shortfalls.

As the battle moves inland, additional fire support will be brought ashore. Procurement of the M198, 155mm towed howitzer has significantly increased the range and lethality of Marine artillery. Additional 155mm self-propelled weapons will be added to the force which will not only add to the numbers of artillery pieces available, but will also provide mobility to support the fast moving aspects of tomorrow's battlefield.

To provide responsive artillery support and to increase our counter-fire capability a Target Acquisition Battery (TAB) will be added to each artillery regiment beginning in FY85. The AN/TPQ-36 countermortar radar is part of the new equipment organic to the TAB. A remotely piloted vehicle will also be added in the future to extend the depth and degree of target coverage. Introduction of the Modular Universal Laser Equipment (MULE) will further improve target-acquisition capabilities and will provide a means for precise designation of targets for air and cannon-launched laser guided weapons by 1986.

The accuracy of artillery fires will be greatly improved by the introduction of an artillery computer system, the Position and Azimuth Determining System, and the Meteorological Data System. Each of these systems is to be introduced between 1984 and 1988 and will provide for more rapid and effective fire support.

We continue procurement of our major anti-air weapons, the Improved Hawk and Stinger missiles. Our funding profiles continue to move us toward a 45-day stock level for both systems. In the case of Hawk, current funding also procures equipment for a fourth battery in one Hawk battalion. The remaining two battalions will be rounded out with a fourth battery in FY85 and FY86.

The Corps' most potent anti-air weapon is the F/A-18. With three squadrons now operating at MCAS El Toro, Santa Ana, California, we can report with confidence that we have a superb fighting machine. This aircraft can gain and maintain air superiority within the amphibious objective area or over any modern battlefield. At the same time its ability to navigate, to locate targets, and to accurately deliver ordnance, provides a tremendous force-multiplier and, as such, enhanced support for the ground commander. Our fighter/attack modernization will culminate with 12 F/A-18 squadrons having replaced the F-4 Phantom II.

The AV-8B Harrier program continues to be the key element in the modernization of our light-attack force. Introduction of the AV-8B will result in more effective and responsive close-air support for Marines on the ground. Harrier's ability to operate from grass fields, roads, ships or prepared airstrips permits the MAGTF commander to position this critical fire support element close to the front lines. This same flexibility may well result in the AV-8B being the only fixed-wing support available ashore during or immediately following the assault. Modernization efforts will result in an eight-squadron, all V/STOL, light-attack force by the early 1990s.

While evolving concepts for the amphibious assault include the insertion of forces in unopposed areas from over-the-horizon, contingencies may still require assaults against defended beaches and landing zones. Moreover, projected threat tactics, utilizing highly mobile and mechanized forces, include prompt, violent counterattacks against landing forces. To defeat such counter-attacks, and to support helicopterborne assaults 15-25 km inland, the range required of naval gunfire systems may reach 50 km or more, depending upon ship stand-off distances. Critically important during the initial phases of the operation and until artillery is established ashore is the rapid response, close, continuous and all-weather fire support associated with naval guns. In meeting these requirements, the current inventory of naval gunfire support platforms is deficient both in range and lethality due to heavy dependence on 5-inch guns.

The Marine Corps is proposing several improvements which are directed at enhancing naval surface fire support.

Near-term programs which will satisfy our lethality and accuracy requirements are available. As the Committee well knows, the Marine Corps fully supports the reactivation of all four IOWA Class battleships. Events of the last year have shown the value of a battleship in a crisis. To make the battleship an even greater asset, we are proposing improvements to the 16-inch ammunition. Specifically, we are looking at development of an improved conventional projectile which deploys armor defeating submunitions. Another program, the guided projectile, is aimed at improving the accuracy of 5-inch ammunition. We strongly support continuation of the semi-active, laser guided projectile (SAL-GP) program through full production.

While firepower provides the muscle for any fighting force, our third factor, command and control systems, provides the nerve center and brains. Through command and control, the commander is afforded the ability to wield his force as a single, cohesive weapon. Many command and control systems are currently in production or are in the final stages of development.

Tactical Air Operations Center (TAOC)-85 will provide semi-automatic control of anti-air weapons including interceptor aircraft and surface-to-air missiles. Slated to undergo operational testing in FY85, this new TAOC will significantly enhance Marine aviation's command and control capability. The U. S. Air Force has recently initiated action to procure this modern technology system as well.

The Position Location Reporting System (PLRS) is an automated tactical command and control system which provides commanders with their own location and the position and identification of all PLRS equipped units. It is also a navigational tool.

MIFASS, the Marine Integrated Fire and Air Support System, is a tactical command and control system which serves to coordinate the employment of all supporting arms. MIFASS offers the commander a means to more efficiently assign available fire support resources and provide more responsive and effective supporting fires.

Two new pieces of communications equipment are scheduled for this fiscal year. The first is the Tactical Facsimile which provides a method to exchange graphic and overlay traffic, and the AN/UGC-74 Tactical Teletype, which provides a printed traffic capability.

The following year will bring the introduction of the AN/TCS-95 Communication System. This system is being built from the ground up with Navy equipment in order to provide a landing force terminus for the Fleet Marine Force (FMF) mobile command circuit.

Automated data processing for deployed Marine Corps units will be greatly enhanced by the introduction of the Deployable Force Automated Services Center. Initial operational testing will commence during the current fiscal year.

Relative to intelligence systems, recent events in the Middle East and in Grenada have validated and reinforced our commitment to improving the ability of tactical commanders to exploit national intelligence collection capabilities--the TENCAP program. The Marine Corps' focus will continue to be directed toward improving our ability to directly access those national systems which complement, not replace, those reconnaissance and surveillance assets organic to MAGTFs operating around the world. Congressional support and direction have played a significant role in the progress we are currently making.

Our ability to produce and disseminate all source intelligence to tactical commanders--and this is the cornerstone of our intelligence effort--will be substantially improved when the Intelligence Analysis Center of the Marine Air Ground Intelligence System becomes operational next year. Other state-of-the-art initiatives, which will ensure the availability of timely and meaningful intelligence support to our fighting forces, include the All Source Imagery Processor and the Integrated Signals Intelligence System.

Perhaps the most unique aspect of "soldiering from the sea" are the tasks associated with logistically supporting and sustaining the landing force. To accomplish these myriad and difficult tasks we rely on our Combat Service Support (CSS) units. The momentum of the Marine Corps' CSS enhancement program--initiated during September 1981 through modernization programs, acquisition of new equipment, and manpower and management initiatives--continues on a steady course. Fleet Marine Force Commanders activated ten cadred units in FY82 and five more in FY83 to restore almost the full spectrum of functional capabilities we require.

Our program to man this restored CSS structure at 89 percent wartime strength by 1987 continues. This will permit units to support the evolving structure resulting from the introduction of new equipment and weapons. Although this requires significant commitment of resources, the momentum must be maintained to ensure the required depth within all critical functional areas.

Modernization of our motor transport fleet continues to be a top priority for sustainability and survivability on today's battlefield. We have begun implementation of the Field Logistics System (FLS) to replace obsolete equipment while simultaneously improving combat service support. The system does so by improving strategic mobility and sustainability. By concentrating on the development of needed materiel in configurations that are compatible with the requirements of container ships, the Marine Corps will not only be assured that available merchant shipping can be used effectively, but a greater flow of materiel across an unimproved beach can be achieved. FLS, in combination with the Navy's Amphibious Logistics Support Ashore (ALSA) program, will result in equipment savings as a result of commonality of equipment and repair parts support, increased use of commercial items, decreased training requirements, and improved effectiveness. FLS is designed around international standards as they relate to inter-modal containers in order to take advantage of all modes of transportation, especially those that are container-capable. The system includes motor transport, containers, tactical shelters, material handling and service support equipment designed for transportability, interoperability, and maximum use of "off-the-shelf" items.

To assist in the off-load of the merchant fleet we are in the process of procuring the Lightweight Amphibious Container Handler (LACH). LACH is a towed straddle-lift crane designed to remove containers and tactical shelters from beached landing craft and place them on trucks for further transport inland.

Amphibious operations in a high intensity combat environment will involve casualties requiring immediate treatment and surgery. In most engagements, the medical facilities of the amphibious task force would reach their maximum capacity early in the engagement or they would be required to leave the amphibious objective area as medical units are being established ashore. To correct this deficiency, the Navy has embarked on a program to provide dedicated, afloat medical support for our forces through the Hospital Ship Program.

The global mission of the Corps requires a degree of flexibility in medical support that can be met only by hospital ships having the capability of going where the Corps goes and of being ready when the first casualty occurs. Contracts have been let that will provide 1000 beds and 12 operating rooms for each of two hospital ships. We anticipate delivery of the first ship in late 1986, the second in mid-1987.

The Rapidly Deployable Medical Facility (RDMF), currently afloat in the Indian Ocean, is dedicated to treating, holding, and returning patients to duty within the theater. The RDMF and the 11,250-bed Fleet Hospital Program provide the bedspace and treatment capacity sufficient to reduce the number of replacements and, consequently, reduce the requirement for medical evacuation out-of-theater.

The Marine Corps applauds and supports the efforts of the Navy's health planners and solicits your support in assuring that the Navy achieves its goals.

MANPOWER

At this time, I wish to turn from hardware related programs to our most important program--Marines and their families.

Praiseworthy performance by Marines committed to important and difficult missions is possible primarily because those Marines are exceptional young Americans. Our first priority, therefore, continues to be the accession and retention of this Nation's finest young men and women.

FY83 was a banner year for recruiting. We surpassed all numerical goals and the quality of our new Marines has never been higher. Ninety-two percent were high school graduates, 63 percent of whom were in the upper half of the nationally normed range of test scores. Continuing at this pace, we will achieve one of our major objectives: to have sufficient high school graduates in the upper AFQT ranges to meet our needs not only for operators of high technology systems, but for intelligent individuals qualified to become noncommissioned officers in other fields, as well.

Success in recruiting quality Marines has been achieved, in part, by continuing to assign our very best Marines to recruiting duty. Quality Marine recruiters attract quality young people who, in turn, represent our future. We are equally selective in the assignment of instructors to the recruit depots and other training establishments.

As is the case with enlistments, officer accessions are also surpassing expectations. Young, well-educated, patriotic Americans are accepting the challenge to be leaders of Marines. They are enthusiastic and display a keen interest in taking on responsibility; they exhibit the capacity for hard work and devotion to duty; and they possess the strength of character that marks them as leaders.

Among the challenges facing all Services is retention; therefore, reenlistment of proven, quality Marines is another key part of our manpower program. During FY83, 14,075 Marines reenlisted--another excellent reenlistment year. A continuing concern, however, is our ability to retain Marines with the skills and experience needed to overcome critical shortages. The Selective Reenlistment Bonus program is an essential tool for filling these shortages. Bonuses are targeted to specific year of service zones in short military occupational specialties. The program is working and it is cost-effective.

For FY85 we are requesting a military end-strength of 199,500 --an increase of 2,900 over the FY84 level. With the positive trends in accessions and retention, we are entirely optimistic about our ability to achieve it. Requirements for additional Marines are primarily tied to modernization programs. We have considered each increase carefully and have programmed them fully in the active force because they are necessary to support our global commitments.

I wish to emphasize a particular manpower issue which we are asking your help to correct--the shortage of field grade officers. The overriding difficulty is that the allowance for field grade officers authorized by the Defense Officer Personnel Management Act (DOPMA) grade tables is insufficient. Under current ceilings we are beginning to exceed the maximum promotion point for the grade of major as envisioned by the Congress, even though we are at the minimum DOPMA selection opportunity for this grade. Consequently, we have requested, through DOD, a modification to the grade table which will permit more majors to serve on active duty without increasing total active duty officer strength. Your support for this modification, which should reach you later this year as part of a bill entitled the "Omnibus Officer Personnel Amendments Act of 1984," is earnestly requested.

Marines have always served with unselfish devotion. Supporting these Marines, often with little or no recognition, are their families who rely on the Marine institution for personal support. Marines are accustomed to, and accept, sacrifice. Similarly, a Marine's family learns to accept sacrifice. While these sacrifices cannot be quantified, one need only stand on a parade deck and watch Marines board buses taking them to a ship or plane bound for yet another deployment to appreciate the sacrifices required of a Marine and his family. Our institutional support--a fair, reliable compensation system, medical care, commissaries and exchanges--is vital to enabling them to bear these hardships.

The trend of compensation over the last two years deserves two observations. First, pay and compensation for Marines and their families has not kept abreast of the cost of living. Second, and perhaps more important, Marines may view this difference as a reversal of the commitment made in FY80 and FY81 to reestablish a fair and comparable compensation system. Comparability with the private sector must be achieved and maintained if we are to resolve once and for all the issue of military pay adequacy. To accomplish this, linkage is required, such as the Employment Cost Index (ECI). By using the military pay adjustment linking mechanism, the ECI will provide a stable, predictable, and understandable device that will keep military pay comparable with the private sector.

Considerable publicity has been focused on the military retirement system. Much has been said and many points of view have been expressed. I would urge the Congress to consider the issue in its totality and not just as an area in which deficit reductions may be possible. Our retirement system, with applications to both active and reserve programs, is, first and foremost, a force management tool. Any changes to it should be undertaken with a full understanding of their impact on our ability to retain good Marines for a full career.

Equally as important as compensation are quality-of-life initiatives which directly affect retention. Our initiatives embrace a wide variety of programs reflecting the Marine Corps' commitment to improving the human dimensions of military service --specifically, the working environment for the Marine and living and recreational facilities for the Marine and his family.

In the area of dependent medical benefits, DOD's efforts during the previous fiscal year have shown that the major cost of CHAMPUS can be contained without sacrificing major medical benefits. We must remain committed to sustaining and, ultimately, improving the current level and quality of health benefits afforded military families.

Frequent family separations required of Marines in order to maintain a forward deployment posture in the Western Pacific, is a matter of personal concern. While our presence in Japan is necessary, I am convinced that it can be maintained without adding to the sacrifices we already ask of our Marines. The Unit Deployment Program has returned to the States over 8,000 infantry battalion and aviation squadron, dependent-restricted billets and replaced them with integral units which deploy for six months and then return to their home bases on a rotating basis. In addition, we seek to increase the number of accompanied tours for career Marines on Okinawa and at Iwakuni, Japan. The increase in the number of accompanied Marines depends, of course, on facilities availability. In that regard, we are working closely with the other Services and the Japanese government and our initiatives are on track. We are optimistic that these programs will result in a more ready, forward-deployed Marine force in the Western Pacific.

The Marine Corps' request for 21,839 civilians in FY85 satisfies only minimum requirements. Our policy is that civilian personnel will be used to meet the requirements of supporting activities to the maximum extent practicable and consistent with legal, training, rotation, and readiness considerations. In order to provide maximum efficiency and avoid costly duplication of effort, military and civilian manpower resources are fully integrated. Reducing civilian strength, without concomitantly reducing workload, requires an offsetting increase in military manpower.

The Marine Corps remains committed to the belief that all Marines are entitled to a drug-free environment, with professional assistance available for drug and alcohol abusers who sincerely desire to adopt a more productive professional and personal lifestyle. As a direct result of this strong commitment, and with sound leadership, we have drastically diminished substance abuse among Marines. During the past year, our documented detection rate of drug users was 400 percent lower than the previous year. On the other hand, success in controlling alcohol abuse is more difficult to achieve and measure. During this fiscal year, approximately 1,300 Marines received formal rehabilitation at Navy Alcohol Rehabilitation Centers and an additional 12,600 Marines received alcohol control assistance at the command level --an increase from last year. We accept this issue as a challenge and, similar to drug abuse, we believe we will be successful in our control effort.

An area of particular interest is leadership--since it represents the very foundation on which the Corps stands. Your Marines are unique people who deserve the best leadership available and we remain dedicated to providing that leadership at all levels. Through small-unit leadership training, we emphasize teamwork and unit esprit in order to achieve high morale and superior readiness. Our emphasis on quality Marines and competent, professional leadership will continue to provide the Nation with a talented, efficient force that can carry out its mission.

Quality youths are entering the Marine Corps and quality Marines are staying on active duty to lead them. Your "force-in-readiness" continues to be, as always, truly ready.

MARINE CORPS RESERVE

As the Nation's "force-in-readiness," with foundations both in law and in mission, the Marine Corps' Total Force is a vital, established reality. The Corps relies heavily on a fully-trained and capable reserve component to complement its active force.

Marine policy directives of 1977 and 1981, and the current Marine Corps Capabilities Plan, stipulate a unique, straightforward Total Force policy. In part, that policy embraces an active component of three combined ground/air combat forces, which have their origin in Title 10 of the U.S. Code. This active force, as presently structured, programmed, and committed around the world, is the minimum capability acceptable short of mobilization. In complementary fashion, the reserve component is established and maintained to provide trained units and qualified individuals to rapidly expand this minimum capability and provide special skills when mobilization is ordered.

Marine Corps' Total Force planning is continuous and dynamic. The process of annual planning, meeting Defense Guidance objectives and interacting with the fiscal reality of the budgeting system, identifies both the requirement and a course of action. It is a deliberate decision-making "discipline," which has resulted in not only the equipment and active/reserve "force mix" existing today but, also, Marine Corps plans for the future.

The term "reservist" is most commonly associated with the drilling Marine of the Selected Marine Corps Reserve (SMCR). Organized collectively into a Division/Wing Team, these Marines represent a balanced force of combat, combat support, and combat service support units. They "mirror image" active counterparts, thereby facilitating rapid assimilation into the total wartime capability and lending credence and continuity to programming.

Additionally, drilling reservists also serve as Individual Mobilization Augmentees. These reserve Marines train alongside their active counter-parts in preassigned mobilization billets within the supporting establishment. Their designated positions require training and immediate responsiveness and are crucial to a successful mobilization effort.

The heart of the Marine Corps Reserve is its manpower. Today's "Citizen Marines" are professionally trained, highly skilled, well-educated, and extremely motivated to accomplish their mission. Programs initiated in the early years of this decade facilitated an SMCR growth in FY83 of over 2200 individuals to a level of 42,690 reserve Marines. Continuation of these efforts will provide an end-strength of 46,447 in FY85, toward a goal of 100 percent manning of authorized reserve structure the following year. Amid this growth, quality recruits remain an objective that is being successfully achieved. This is evident in the numbers of high school graduates who comprised 94 percent of FY83 non-prior service enlistments as compared with 76 percent in 1980.

In a "quality training" effort, Reserve programs are increasingly characterized by reserve participation in active exercises. In FY83 approximately 17,000 reservists participated in 14 major exercises here and abroad. SMCR unit training is complemented by increased emphasis on individual professional development and enhanced opportunities for members of the inactive Individual Ready Reserve (IRR) to refresh their MOS skills by training with active units.

Marine Corps "Total Force" goals mandate structuring, equipping, and modernizing the reserve in such a fashion that it remains a viable fighting force. Through past efforts, 94 percent of the training equipment required is now on hand thereby allowing units to conduct effective training and maintain proficiency. With the continued support of Congress, the Corps will proceed toward its objective of full wartime equipment and sustainability for the Reserve by FY88.

Continuous review of requirements within the Total Force has produced planning for increasing reserve structure in certain areas. In that regard, 1985 is a pivotal year which will see, in addition to other improvements, the reorganization of the infantry battalion in order to mirror its active counterpart. Additionally, planned increases include: two Civil Affairs Groups, two Salvage Platoons, a Bridge Platoon, and an Air/Naval Gunfire Liaison Company by the end of 1985. Still further improvements to reserve artillery and anti-tank capabilities are planned for the program years.

As the beneficiary of Congressional foresight in FY82, the 4th Marine Aircraft Wing recently took delivery of four new KC-130T aircraft. These represent the first new aircraft ever delivered to a Marine reserve squadron. Continued efforts toward modernization of reserve aviation continues to be of the utmost importance. The Reserve Wing operates with an aging aircraft fleet, and shortages still exist in KC-130 refuelers and AH-1 helicopters. The Marine Corps has developed a long-range plan to upgrade capabilities, and its importance is underscored by the fact that reserve squadrons are now assigned specific contingency missions. Successful execution of this modernization plan depends upon the continued availability of funding for active as well as reserve programs.

Reserves continue to demonstrate that they are ready. In FY83, 90 percent of the units tested in accordance with our demanding Marine Corps Combat Readiness Evaluation System were classified as combat ready. In unannounced mobilization drills, units were found to be extremely well prepared. Their readiness is a tribute to their dedication and resourcefulness.

Today's reserves, professionally trained and properly equipped, represent a vital portion of the Marine Corps' total capability. They provide one-fourth of the total structure and one-third of the Corps' total manpower, trained and ready in the event of mobilization. Additionally, units of the selected reserve are major contributors in the context of total capability. Forty percent of the tanks, 33 percent of the heavy artillery, 30 percent of the light attack aircraft, and 33 percent of the Corps' anti-aircraft missile capability will come from the Fourth Division-Wing Team, if mobilized.

In any future conflict, as the term "reserve" dissolves into Marines fighting side by side, the Corps is confident that its Total Force, strong thanks to the continuing support of Congress, will accomplish its mission.

OPERATIONAL PERFORMANCE

The Marine Corps remains ready to respond to any assigned mission. To accomplish this, the Marine Corps' top operational priority is readiness. Marines are capable of executing amphibious warfare and are always prepared to perform "such other duties as the President may direct." This combat readiness is available through an array of task organized Marine Air-Ground Task Forces (MAGTFs) fully combat-ready for immediate contingency deployment.

Numerous elements must be coordinated to ensure that our readiness posture continues. Our combat-readiness is the product of qualified personnel, sufficient combat and combat support equipment, realistic combat training, and uncompromising standards of leadership.

Although shortages still exist within some military occupational specialties, the overall personnel situation has improved markedly in the past several years. As far as equipment is concerned, we are at the highest readiness level we have ever achieved. Our improved equipment readiness is a function of the modernization effort. In particular, the introduction of new equipment and vehicles, and improved communications and weapons systems, will enhance our capability to confront today's challenges and to win on beach or battlefield in the future.

Improvements in personnel, equipment, and spare parts have been substantial. Complete fulfillment of both our readiness and sustainability requirements in these areas is essential to our continued success.

TRAINING

The key element in the readiness equation continues to be training, both individual and collective. History has shown us that when a nation is called to arms it fights as well as it has trained. We remain dedicated to ensuring that when Marines respond to the call to arms, their preparation will have been based on the most realistic and effective training the Marine Corps can provide.

Marines train as a Total Force, stressing both active and reserve participation in Marine air-ground team training. Our training standards are systematically developed, mission-oriented, uniformly high, and intensively applied at both the individual and unit levels. This approach enables our Marines to acquire and sustain the skills needed to deal with the complexities of modern combat.

Realistic, mission-oriented training that supports the missions of our force commanders is our highest training priority. A good example of this is the combined arms training we conduct at the Marine Air Ground Combat Center, Twentynine Palms, California. Here, annually, eight regular and two reserve infantry battalions, task organized into MAGTFs with a combat service support element and an aviation combat element, participate at scheduled intervals in this rigorous combined arms training. Our Marines are provided the opportunity to employ every asset of the air-ground team under the most realistic of conditions. An additional 10,000 Marines train yearly at the Marine Corps Mountain Warfare Training Center, Bridgeport, California, where Marines hone their fighting and survival skills in a harsh, mountainous, cold-weather environment. The training at these two centers typifies both the terrain and climatic conditions in which Marines might fight if called upon to carry out our strategic roles in Southwest Asia or in Northern Europe. Annually, we also send two infantry battalions to train at the Army's excellent Jungle Warfare School at Fort Sherman, Panama.

Marine aviation units train to the same high standards as their counterparts on the ground. Realistic aviation training, which teaches air crews how to plan for and conduct offensive air-support operations in a contemporary threat environment, is conducted by the Marine Aviation Weapons and Tactics Squadron I, located at MCAS Yuma, Arizona. Skills developed at the training center are then taken by the air crews to their home units where they are incorporated into unit training programs. Marine aviators also aggressively participate in joint-service training programs such as the Air Force's Red Flag exercises, where Marine air crews improve their flying skills in a demanding air combat environment.

We continue to seek every opportunity to share knowledge and experience through combined exercises and cross-training with our friends and allies. This type of interaction is invaluable not only as a training implement but as a diplomatic tool as well. The Marine Corps, therefore, enthusiastically supports initiatives by Congress and the DOD to bolster Security Assistance Programs.

The successful training of the individual Marine is the foundation upon which our collective effort is built. Recruit training is the cornerstone of that foundation. The training that our young men and women receive at the two recruit depots does more than teach basic skills. Marine training inculcates responsibility and emphasizes patriotism, integrity, citizenship, and brotherhood--all vital traits intricately entwined with our Country and Corps and qualities which we believe are as critical to the transformation of a recruit into a Marine as is mastery of the M-16 rifle. Those qualities which make our Marines unique are directly attributable to our special approach to recruit training.

Our commitment to the highest standards of personal excellence ensures our Marines' success on the battlefield. Yet, these qualities and traits are not the sole domain of our Corps; they are key elements in the social fiber of our society as well. As Marines, we feel that we have a responsibility to society not only for training the world's finest fighting organization, but also for ensuring that our training will always provide a positive direction for the youth of this Nation.

INTERNATIONAL TERRORISM

Let me now comment on the threat posed by international terrorism to our Corps and our nation.

Terrorist violence to shock or intimidate governments is an increasing problem for the world community and US national security. The threat from international terrorism to US citizens, especially to the US military presence abroad, has never been greater. The scars of the Beirut bombings are fresh and sore.

Terrorism is not a new form of warfare, but it has taken on a new dimension. It is no longer just random acts of individuals or small groups but rather acts frequently encouraged and coordinated by sponsor states. State support for international terrorist organizations, to include financial aid, weapons and training, will further escalate the frequency and lethality of terrorism. Consequently, the instability created by acts of terrorism in the industrialized West and Third World nations potentially undermines the security interests of the United States and its allies.

During the past few months, the Marine Corps has responded to this threat by vigorously employing every available asset we can bring to bear on the problems posed by terrorism. The cornerstone of this effort is an ongoing, thorough, and comprehensive review of our posture and capability as it relates to defensive measures, warning, and state of training.

We have already implemented many interim recommendations based on this review, such as improving personnel, facility, and base security and upgrading anti-terrorism training for deploying forces. The review is to be completed on 1 March, and we expect to do a great deal more on a Marine Corps-wide basis, to include enhancing intelligence apparatus to provide timely, accurate intelligence to support anti-terrorist measures and to support a proactive preventive policy.

The Marine Corps is determined to minimize the risk posed by this threat and to frustrate terrorists' efforts to impede the successful accomplishment of our assigned mission.

FORWARD DEPLOYMENTS

The Navy/Marine Corps team continues to operate as an integrated force that is currently deployed worldwide to support national policy, demonstrate resolve to our allies, and serve as a major deterrent to potential enemies.

Forward deployed in Japan, the III Marine Amphibious Force (MAF) provides a presence in the Far East and is available for rapid reinforcement/response in the Southwest Asia region. Continuously deployed from III MAF assets is the 31st Marine Amphibious Unit (MAU), which is forward deployed afloat in the Western Pacific and Indian Ocean. The Near Term Pre-positioned Force, with 7th Marine Amphibious Brigade equipment embarked, remains strategically staged at Diego Garcia and Apra Harbor, Guam, to augment our mobility for rapid closure of Marines into Southwest Asia.

Located on the East Coast is II MAF which deploys units to the Mediterranean on a continuing basis. Since September 1982, these units have comprised the U.S. contingent to the Multi-National Force in Lebanon. II MAF annually deploys a MAU or Marine Amphibious Brigade (MAB) to Northern Europe for training and joint/combined exercises, and frequently deploys similar MAGTFs to the Caribbean. The first set of Maritime Pre-positioning Ships are to be available during 1984 and 1985, and will be sourced from Fleet Marine Force, Atlantic assets. II MAF units also provide combat elements to III MAF units on a rotating basis for the Unit Deployment Program.

I MAF, located on the West Coast, is tasked with responsibility for developing plans for deployment and employment of Marines in Southwest Asia. Additionally, I MAF provides combat elements for III MAF deployed MAUs and Japan-bound forces for the Unit Deployment Program.

The Navy/Marine Corps team has recently exercised in a number of Mediterranean countries, in Europe, throughout the Pacific Ocean area, in the Caribbean Sea, and with our allies in South America. In West Africa, our sailors and Marines visited six countries as "good will ambassadors," and in Southwest Asia conducted an amphibious landing exercise. These deployments and exercises underscore the inherent flexibility and capability, both seaborne and airborne, of Marine forces to operate in various environments.

FISCAL RESPONSIBILITY

The financial resources we have requested for FY85 will support the requirements and programs discussed throughout this statement. This budget reflects a balanced approach with only minor real growth over fiscal year 1984. It will allow us to "flesh out" our active and reserve forces; continue to support depot maintenance and pre-positioning programs, thus enhancing strategic mobility; and improve training for our reserves. In our procurement appropriation, we continue to emphasize the sustainability and modernization programs of recent years.

I am keenly aware of congressional concern with the proper utilization and expenditure of these resources, and wish to assure you that I personally share those concerns. We Marines will continue to seek economies and efficiencies in all facets of our operations to ensure that our resources are utilized frugally and effectively.

A summary of financial resources by appropriation and authorization request which makes up the Marine Corps FY85 budget to support the programs and requirements discussed during this statement is displayed in Appendix II.

Our FY85 budget request is a forthright appraisal of our resource requirements for the next fiscal year. It has been scrutinized for excesses and, as a result, the Marine Corps' contribution to the national defense continues to be significant while our consumption of resources remains relatively small.

CONCLUSION

In closing, I would once again emphasize that geopolitical realities call for recognition that this Nation must reestablish clear maritime superiority. In the face of Soviet political and military expansion, Seapower, in concert with our forward defense policy and global alliances, represents the linchpin of deterrence --and power projection, should deterrence fail.

The Navy/Marine Corps Team's capability for power projection--to establish and defend advanced naval bases, to seize strategic choke points, or to establish a lodgement through forcible entry--can be most disconcerting to those who would challenge us. Considering the vast littorals the Soviets would be compelled to defend in the event of general war, it is evident that our capacity to strike at will, when and where we choose, serves as a significant device for strategic distraction which can divert, fragment, and constrain major enemy forces. Such global flexibility, combined with the potent firepower resident in our carrier battle and surface action groups, will always serve to give our adversaries reason for pause.

In the final analysis, however, the establishment and effective exercise of Seapower is the function of Marines and Sailors--quality personnel with the determination and spirit to influence the destiny of this Nation from their outposts on land, at sea and in the air. America's young men and women representing the Navy/Marine Corps Team across the globe have that determination and spirit. With the continued support of the Congress and the American people, they will continue to positively influence this Nation's destiny and, in doing so, the destiny of the free world.

Thank you.

APPENDIX I

ENHANCEMENT PROGRAMS

TABLE I-I

MOBILITY ENHANCEMENTS

Light Armored Vehicle (LAV)	o Lightweight, flexible, agile fighting vehicle o Firepower intensive organization o 145 LAV's/LAV battalion (CY83) o Helicopter transportable o Enhanced strategic transportability
Landing Vehicle Tracked LVT7A1	o Service life extension program began 1982 o Extends use until 1990's o New engine, non-integral fuel tank, all electric weapons station o 327 new LVT's for MPS
Landing Vehicle Tracked (Experimental)(LVTX)	o Follow-on to LVT7A1 (IOC mid-late 1990's) o Increased firepower, improved water and land speed, lower silhouette, improved armor

TABLE I-II

INFANTRY ENHANCEMENTS

Smaller - Firepower Intensive	o Personnel - battalion from 913 to 824 (FY83-85) o Firepower up 25%
Improved Small Arms	o .50 cal MG - 8 per battalion; procurement FY82-83 (IOC FY83) o Shoulder-Launched Multipurpose Assault Weapon (SMAW) 18 per battalion; procurement FY84-89 (IOC FY84) o Squad Automatic Weapon (SAW) - 68 per battalion; procurement FY82-87 (IOC FY84) o M-16 Product Improvement Program (PIP) - procurement FY82 - 89 (IOC FY84) o 9mm Pistol - procurement FY85 - 88 (IOC FY85) o M60E3 7.62mm MG Product Improvement Program (PIP) - Procurement FY84-85 (IOC FY85)

	o MK19 40mm Grenade Launcher - 12 per infantry battalion - procurement FY82-87 (IOC FY84)
Mortar Enhancement	o 81mm - proposed procurement FY86-87 (IOC FY88) Awaiting US Army IPR & Acquisition Decision o Lighweight Company Mortar deliveries complete

TABLE I-III

ANTI-ARMOR ENHANCEMENTS

Tube-Launched Optically-Tracked, Wire-Guided Missile (TOW)	o 144 TOW/division - procurement FY80-86 (IOC FY82) o Phase I procurement complete FY81 - 5" warhead and extended range to 3750M (IOC FY81) o Phase II procurement began FY80 - 6" warhead, extended range and electrical optical counter-measures (EOCM)(IOC FY83) o Night sights, 144/division - procurement FY80-86 (IOC FY82)
DRAGON	o 8 additional per battalion, total 32 (IOC FY83) o Night sight, 16 per battalion - procurement FY79-83 (IOC FY82)
Mobile Protected Gun System (MPGS)	o Helicopter transportable o Joint USMC/US Army program
Tanks	o M60A1, end of service life late 1980's o Replace or upgrade o Enhanced anti-armor capability o M1E1 - submitted as initiative for POM-86 to replace M60A1
Air Delivered	o Modern armor threat necessitates air delivered anti-armor weapons which offer increased aircraft survivability and target lethality o Near-term, state-of-the-art, anti-armor weapons being pursued for both fixed wing and helicopters o Laser Maverick - fixed wing PGM (IOC FY85) o Hellfire - helicopter PGM (IOC FY85) o GATOR - area/area denial weapon (IOC FY86) o 25mm multipurpose gun for the Av-8B (IOC FY85)
Light Anti-Armor Weapons	o Continue to participate with Army in LAW evaluation program o Interested in most cost effective system that meets USMC requirement o Monitor Army's M72 PIP

TABLE I-IV

ARTILLERY ENHANCEMENTS

Conversion to M198	o New improved structure transition began in FY83, procurement FY79-82 and FY86 o 105mm howitzer reduction of 162 155mm howitzer increase of 192
Additional 155mm (SP)	o Increase of 30 tubes - 3 batteries by FY86, total 5 batteries by FY89
Addition of Target Acquisition Battery	o One each in FY85, 87 and 88
Precision Guided Projectiles	o Modular Universal Laser Equipment (MULE) procurement FY82-85 (IOC FY85) o Copperhead - procurement programmed
Family of Scatterable Mines (FASCAM)	o Area Denial Artillery Munition (ADAM)(IOC FY82), anti-personnel mines and Remote Anti-Armor Mine (RAAM) anti-tank mines - procurement FY81 (IOC FY83)
Artillery Computer System	o Procurement FY86 & 87 (IOC FY87)
Artillery Rocket System	o Area saturation system o Designed to suppress/neutralize/destroy enemy artillery/forward air defense/C3 systems o IOC - TBD

TABLE I-V

AVIATION ENHANCEMENTS

TACAIR	o AV-8B - responsive, effective CAS o F/A-18 - superior fighter/bomber, force multiplier o AH-1T - improved attack helo o CH-53E - free world's most capable heavy lift helo
WEAPONS	o Laser Maverick - precision guided munition (PGM) for CAS o Hellfire - anti-armor helo PGM o Gator - air deliverable anti-armor mine o I^2R Maverick - deep air support weapon
RDT&E	o JVX - self deployable, medium lift assault transport with strategic and tactical implications. o Helo development - T-700 enhanced engine for AH-1T, Hellfire MOD for AH-1J/AH-1T Cobras, helo night vision enhancements.
AIRSPACE COMMAND & CONTROL	o TAOC-85 - command and control of airspace, aircraft and missiles. o IHAWK - medium range anti-air missile. o Stinger - shoulder launched surface to air missile

RESERVE MODERNIZATION	o A-4M - light attack aircraft to reserves as AV-8B enters active component. o F-4J/S - superb fighter/attack aircraft.

TABLE I-VI

COMBAT SERVICE SUPPORT ENHANCEMENTS

Logistic Vehicle System (LVS)	o Four rear body units; container hauler wrecker recovery dropside cargo crane 5th Wheel o Off road mobility o 60" fording capability o Replaces aging vehicles such as 10 ton and other assets together with various trailers and dolly converters o Fielding commences 2d Qtr FY85
High Mobility Multi-purpose	o Enhanced Tow carrier o Weapons platform for MK-19 40MM MG o Replaces 8MT vehicles in marine division o Replaces all communicator vehicles o 26,000 Current Marine Corps Vehicles Replaced by about 14,000 HMMWV's (IOC FY85)
Commercial Utility Cargo	o Replaces the M880 o Three body varients o (a) Utility o (b) Cargo o (c) Shelter carrier varient
5 Ton Truck M939	o Replaces current overaged 2 1/2 and 5 ton tactical fleets o Five configurations o Prime mover for M198 Howitzer
Field Logistics System (FLS)	o Exploits the benefits of containerization o Designed around international dimensional standards o Reduces manpower, system costs and shipping space requirements o Five major subsystems o Enhances logistics support system and readiness posture
Medium Girder Bridge	o Lightweight, hand-erectable, easily transportable, and rapidly employable girder type bridge of welded-aluminum alloy o 100 ft. spans or 162 ft. spans with link reinforcing set o Eight bridges per company (hand erectible by 4 or 6 man teams) o Deliveries made to schools

APPENDIX II

FISCAL

TABLE II-I

APPROPRIATION/AUTHORIZATION REQUEST

($ IN MILLIONS)

APPROPRIATION TITLE	FY 1984	FY 1985
Military Personnel, Marine Corps	3,525.1	4,845.9
Reserve Personnel, Marine Corps	179.6	269.5
Operation & Maintenance, Marine Corps	1,563.1	1,683.1
Operation & Maintenance, Marine Corps Reserve	52.3	58.6
Procurement, Marine Corps	1,741.3	1,978.6
Marine Corps Stock Fund	20.8	34.9

TABLE II-II

END STRENGTH AUTHORIZATION REQUEST

(# IN 000s)

CATEGORY	FY 1984	FY1985	FY1986
Active Duty End Strength	196.6	199.5	201.7
Selected Reserve Average Strength	42.1	44.3	46.1
Civilian Personnel End Strength (USMC Portion of DON Request)	21.3	21.8	22.0
Average Military Student Training Load, Active	20.7	21.2	22.2
Average Military Student Training Load, Reserve	3.8	3.9	4.1

PREPARED STATEMENT OF REAR ADM. DANIEL L. COOPER

DIRECTOR OF OFFICE OF BUDGET AND REPORTS

AND

DIRECTOR OF FISCAL MANAGEMENT DIVISION

THE DEPARTMENT OF THE NAVY

BUDGET OFFICER'S STATEMENT

Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss the Department of the Navy's Budget request for FY 1985. This budget is the result of a continuing review both within the Department of the Navy and the Office of the Secretary of Defense. Before presenting the details of the FY 1985 budget, I want to discuss the reasons for the higher level of funding. I also will discuss a few of the indicators of improvements made with your help since 1981 and will briefly mention some management initiatives being pursued to ensure efficient and effective use of available resources.

The FY 1985 budget continues the emphasis placed on national defense by the President. We are requesting $101.3 billion in total obligation authority (TOA). Outlay estimates are $88.3 billion. This TOA amount is $19.3 billion higher than in FY 1984 and is comprised of significant increases in readiness and sustainability and some other programs. First of all, a change to accrual accounting for retired pay has added $5.4 billion to the Department of the Navy military personnel accounts. Funds previously appropriated in the Retired Pay, Defense account have now been allocated to the Departments and the request for appropriation is included in the military personnel accounts. There is a $4.3 billion increase in the Operation and Maintenance (O&M) accounts, primarily for readiness, including $1.1 billion for ship maintenance and modernization. Other O&M increases include aviation depot level repairables, termination liability for the TAKX, training, ship operations, and expansion of a new program begun in FY 1984, BOSS, or Buy Our Spares Smart.

We are requesting an additional $2.8 billion in the Weapons and Other Procurement appropriations to procure more Tomahawk missiles, CAPTOR, MAVERICK, CIWS, and increased numbers of the MK-46 torpedoes in order to improve fleet readiness and sustainability. The research and development appropriation request increases of $2.3 billion to maintain the technical superiority of the future Navy. The major portion of this increase, $1.3 billion, is in tactical programs; an increase approximating $.6 billion is in strategic R&D. Some of the major tactical programs in R&D include the new design SSN, F-14D, JVX, SUBACS, and Electronic Warfare. The shipbuilding account (SCN) increases by $1.7 billion and funds seven more ships than last year, including one more SSN and the procurement of the lead DDG-51. Other increases between the FY 1984 and FY 1985 shipbuilding programs include an additional LSD-41, MCM, TAO, three TAGOS, and two TAGS. The Aircraft Procurement, Navy appropriation increases by $1.3 billion which provides for 55 more aircraft than the FY 1984 budget, including increased procurement of the AV-8B, P-3C, AH-1T, C-2, UC-12B, TH-57, and Adversary aircraft. In addition, an increase of $.7 billion in Military Construction is necessary to provide needed modernization of the facilities that support the operating forces. As you can see, the emphasis in this budget continues to be on improving readiness and sustainability while continuing the buildup toward force level objectives.

DEFENSE IMPROVEMENTS

I will now discuss the improvements in defense which we have accomplished since FY 1980, improvements which, as the Secretary and CNO have stated, have been substantial in many areas. This improvement is best portrayed through an examination of readiness, sustainability, modernization and force building, our four pillar concept. These four pillars are a way of measuring the emphasis in a given budget by looking at different appropriations and even elements within appropriations, then combining these seemingly disparate groups into factors of readiness, sustainability, modernization, and force levels.

Readiness Improvements

Readiness includes the operation and support of the forces to meet both peacetime and "initial" wartime requirements, "initial" being defined as that support required prior to the beginning of hostilities. Personnel, operations, maintenance, supplies, training, military construction, tactical employment of the Marine Corps and strategic deployment and posture of the Marine Corps are all elements of readiness. There are several ways of measuring the readiness of aircraft and ships. For aircraft, one measure is the percent of aircraft that are mission capable, in other words, those aircraft able to perform one or more of their assigned missions. In FY 1980, the aircraft mission capable rate was 59%. By FY 1983, we were already seeing the improvement brought about by the increased budget emphasis on Defense as the mission capable rate rose to 66%. We are projecting that the rate will reach 67% in FY 1984 and the FY 1985 budget provides for a 70% mission capable rate. Another indicator is the number of aircraft able to carry out all assigned missions. The fully mission capable rate shows a similar improvement from FY 1980. Additionally, the combat readiness ratings of aircraft squadrons between FY 1981 and FY 1983 are up by more than 24%.

Ship readiness indicators are also improving. C ratings are used to report the combat readiness status of individual ships. Ratings are made in four areas: supply, equipment, personnel, and training. The number of ships reporting fully or substantially combat ready (C-1 or C-2) increased significantly between FY 1980 and the first quarter of FY 1984. The overall combat readiness for the ship forces is up 26.3% from FY 1981-83. Another indicator used for ships is the number of ships in the overhaul backlog. In FY 1980, 19 ships were in backlog while in FY 1983 this number had dropped to 14. In FY 1984 the budget projects 12, while only two are estimated in the backlog in FY 1985.

Total funding for all types of readiness rose $8.0 billion from FY 1980 to FY 1984. In my opinion the primary point in the improved percentages is not the absolute numbers or the ambiguities of measuring; the important fact is that there is a large and identifiable gain in readiness demonstrated by these figures.

Sustainability Improvements

Sustainability provides the ability to mobilize and operate for some period during wartime. This category includes wartime stocks of ordnance, spare parts, fuel, and medical supplies, and the Naval Reserves. Here the Department improved its asset position in all areas. Additional funding has been requested for PHOENIX, SPARROW, and SIDEWINDER air-to-air missiles. The requested procurement quantities of these weapons increase by 1,340 between FY 1984 and FY 1985: 555 for SPARROW, 650 for SIDEWINDER, and 135 for PHOENIX. Spare parts procurement has also been increased to support the air-to-air missile program. $80.6 million is budgeted for air-to-air missile spares in FY 1984 while $150.0 million has been included in FY 1985. $62.0 million is included in FY 1985 for improvements including those for reliability and maintainability.

A similar improving trend occurs in the area defense missiles, SM-1 as well as the medium and extended range versions of the SM-2. As the number of battle force ships increases, the requirement for these missiles also increases. As a result of our joint efforts over the past several years, we are increasing both the absolute missile inventory and the capability to fight a sustained war.

A sharp increase occurs in torpedo assets. This reflects the introduction of the MK-48 ADCAP and continued large buys of the MK-46 ship and air-launched torpedo. MK-48 torpedoes are procured at a steady annual rate of 144 units each year between FY 1983 and FY 1986. Procurement of the MK-46 increases from 440 in FY 1983 to 1521 in FY 1986. We are also increasing shipboard ammunition. The FY 1985 budget includes $235.1 million for ship gun ammunition, an increase of 53% and this budget will fill 98% of the ship gun ammunition acquisition objective. $146.3 million is included in FY 1985 for other expendable ordnance such as chaff. The budget also includes $548.7 million for air-launched ordnance, an increase of 78% over FY 1984; it will fund 49% of the air-launched ordnance acquisition objective through the FY 1985 funded delivery period.

Modernization

Modernization includes research and development and certain procurements needed to improve capability, such as the modification or upgrade of systems and weaponry. In this category, we are projecting 24% real program growth in RDT&E,N with emphasis on both tactical programs, such as the SSN new design and F-14D upgrade, and strategic programs, where TRIDENT enters the second year of full scale development. The modernization category also includes important aircraft modifications and ship backfit programs needed to maintain and improve the capabilities of our existing forces. These programs include the carrier service life extension programs (SLEP); the digital engine control and engine monitoring system for the AV-8B; the S-3 Weapon System Improvement; the OV-10, H-46, and H-3 SLEP's; the E-2C TRAC A antenna and the BB reactivation. Ship modernization efforts are a continuation of prior year programs. Expanded programs include LAMPS-III ASW systems aboard frigates, nuclear alterations, installation of Navy equipment aboard Coast Guard ships, noise silencing alterations, close-in weapons system installations, and TOMAHAWK cruise missile capability.

Force Structure

Force structure includes procurement of major end items such as ships, aircraft, construction of new facilities, manpower for the Marine Corps, and Marine Corps unit equipment. The FY 1985 budget continues progress toward our objective of a 600-ship Navy in FY 1989. We have increased from 479 battle force ships in FY 1980 to 525 at the end of FY 1984 and we project that we will reach 545 at the end of FY 1985. Several older and less capable ships at the end of their service lives have been retired, replaced by newer, more capable ships. Other ships have been transferred in order to upgrade the Naval Reserve forces. During FY 1983, 15 additional ships were added to our forces, including the battleship NEW JERSEY, nine PERRY class frigates, three Los Angeles class SSNs, and two Ohio class ballistic missile submarines. The plans to modernize our carrier forces by extending the service life of FORRESTAL, followed this year by the INDEPENDENCE, are on track. Aircraft deliveries remain on schedule to match the buildup for the 600-ship Navy. Primary active aircraft inventory increases from 4,436 in FY 1980 to 5,070 in FY 1985. Deliveries of new aircraft were 132 in FY 1980 and is projected to be 248 in FY 1985. We continue the transition from F-4s to F-18s with the last two squadrons of F-4s transitioning to the F-18 in FY 1987. We are also increasing the number of F-14 squadrons.

Personnel Improvements

With respect to improvements in management of our most important resource, personnel, the Navy and Marine Corps have exceeded quality objectives for the fourth consecutive year. In FY 1980, 73% of the initial accessions had high school diplomas. In FY 1983 the Navy exceeded the goal of 80%, achieving 90% first term nonprior service male enlistees with high school diplomas. This success has continued into the first quarter of FY 1984. Navy has reduced the Petty Officer shortfall from 22,000 in FY 1980 to 9,300 at the end of

FY 1983. Overall officer retention has also improved. Enlisted retention rates continue to improve, as shown in chart 1 below. This success is obviously affected by the state of the economy, however, so your continued support of pay and benefit programs is crucial to our progress in this area.

CHART 1
ENLISTED RETENTION

	FY 1981	FY 1982	FY 1983
1st Term			
Navy	41.7%	50.3%	55.7%
MC	26.6%	34.0%	33.3%
2nd Term			
Navy	56.9%	63.0%	65.4%
MC	73.0%	74.9%	72.8%
3d Term			
Navy	94.1%	95.3%	96.6%
MC	74.9%	78.0%	80.3%

Reserve Force Improvements

The improvements we have made in the reserve force posture are noteworthy. We are doing more to integrate reserve air and surface forces with the active forces. For example, the Mine Countermeasure Craft of Opportunity Program (COOP), which is designed to use locally procured civilian craft to augment the MCM force in time of mobilization, continues to grow since its beginning in FY 1984. The transfer of the FF-1052 and FFG-7 class ships into the Naval Reserve Force (NRF) continues toward the planned goal of 26 frigates. By the end of FY 1984, there will be 6 FF-1062 and 3 FFG-7 class ships in the NRF With 2 more FFGs scheduled to transfer to the NRF in FY 1986. In FY 1985 we will begin a $29.2 million construction program to support the frigates and mine warfare ships homeported at the Treasure Island Naval Station. We now have a total of four Shore Intermediate Maintenance Activities/Naval Reserve Maintenance Facilities (SIMA/NRMF) located at Long Beach, San Francisco, Newport, and Philadelphia. In FY 1985 the numbers of more modern aircraft continue to increase in the Naval Air Reserve Forces with transition from the A-7B to the A-7E, from the SH-3D to the SH-2F, and from the P-3A/B to the P-3 with the TACNAVMOD. More flight hours for the F/A-18 squadron which was formed in FY 1984 and the manning of an F-14 squadron improve readiness and the ability of the Naval Air Reserve to mobilize more effectively. We are also expanding the Squadron Augment Unit Logistic squadrons.

The Active/Reserve Mix study group has been very active over the past months as the roles of the reserve and active forces are being evaluated by every level of the Navy Department.

Improvements in the management and effectiveness of Naval Reserve programs continue with increased use of automation and new training equipment. By the end of FY 1985, 2 shipboard simulators will be added for a total of 35 towards a goal of 38 and 12 damage control trainers will be added for a total of 49 toward a goal of 73. Our selected reserve strength will be 113,390 at the end of FY 1985 and we will have an end strength of 15,410 TARS. Selected Reserve manpower is programmed to achieve NAMMOS requirements in FY 1988.

Management Initiatives

In order to get the most out of the resources available to us we are continuing to implement management initiatives. These initiatives include implementing applicable Grace Commission recommendations, reviewing our procedures for possible economies and efficiencies, and establishing a flag-level competition advocate in the Naval Material Command who reports directly to SECNAV. In the second half of FY 1985, we will begin a test of stock funding aviation depot level repairables (DLRs). This procedure will now give users an incentive to repair parts at the intermediate, or local, level instead of sending them to the depot for repair, thus saving money and increasing readiness through improved parts availability. We expect to save over $400 million by stock funding the aviation DLRs.

We have established the Buy Our Spares Smart (BOSS) program with over 90 initiatives. This program has been established to improve our ability to order and procure spare and repair parts as efficiently and economically as possible. One initiative involves getting more proprietary data from contractors so that we can replace worn parts without replacing the entire, expensive piece of equipment. So far we have accomplished this goal for 11 items worth $4.2 million. We are expanding competition, determining the "should cost" value of spare parts and establishing a "price-fighter" team. In its first month of operation, this team has identified potential cost savings of $1.4 million on 28 items that appear to be priced significantly higher than their reasonable value. We have also found that better training of the procurement work force is necessary to ensure that the people who are actually letting contracts for these thousands of items know and recognize what they are buying and can evaluate a reasonable price. We have also set up a hotline to encourage users who are familiar with the use and worth of end products, to question unreasonable prices. A BOSS-inspired change from sole source to competitive procurement of two gimbals (a gimbal provides a two-axis stable mounting for gyroscopes) saved more than $300,000. Additionally, two employees have been rewarded who located competitive sources for previously sole source contracts at a savings of almost $2.0 million.

Economies and Efficiencies.

We have identified over $15.0 billion between FY 1981 and FY 1989 in savings and cost avoidances. These include cancelled and reduced programs, multiyear procurements, and certain Grace Commission recommendations. The Department of the Navy continues to improve internal management controls with major weapon systems costs occupying much of our attention. We are reviewing ways of improving cost reports and have implemented a system which strengthens the Secretary of the Navy's control over those changes which cause cost increases during execution. We are improving our program to prevent fraud, waste and abuse by pursuing goals of efficiency and integrity under the Navy Inspector General, with increased emphasis on compliance with Title II requirements in accounting systems. We have also set up mechanisms leading to improved internal review. In the area of ADP management, we instituted a review by the National Academy of Sciences. Further, review by the functional sponsors of ADPE requirements has been established and improved equipment inventory management has been initiated.

Our record in contracting is noteworthy. In FY 1983, we delivered 21 ships. Twelve of these were on time and eight were early. We awarded 30.5%, $13.2 billion worth, of procurement contracts competitively versus 25.7% in FY 1981. In FY 1984, we have accomplished an extremely difficult task, having let 83% of our SCN contracts in the first quarter. This management action allows us to save escalation money at the end of the building process since any delay in letting the contract translates to a later delivery and the escalation costs incident to that delay. 64% of the dollar value of the SCN ships was awarded competitively versus 38.7% in FY 1981. All aircraft prime contracts, with the exception of the C-2 multiyear procurement contract, will be firm fixed price types in FY 1984. We believe that our increased emphasis on improving management has paid off and we will continue to pursue every avenue open to us.

FY 1984 REVISED BUDGET

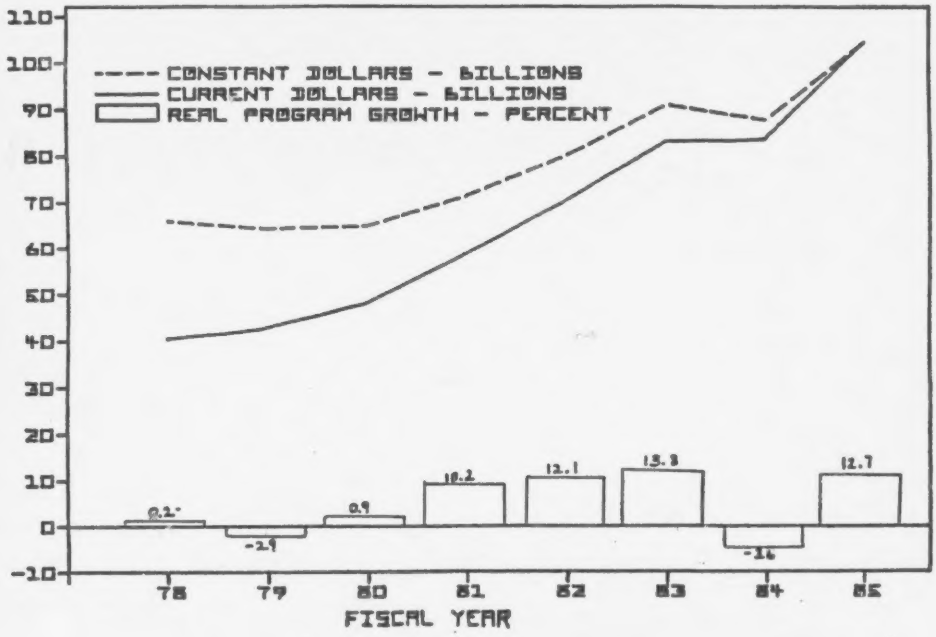
Before presenting a detailed discussion of the Department of the Navy FY 1985 budget request, I would like to address the revised FY 1984 budget which totals $82.0 billion. Following deliberations by the Congress on the FY 1984 budget a total of $81.2 billion was enacted of which $305.4 million was reappropriated in the WPN and SCN appropriations for HARM, CAPTOR, FFG-7 and the TAH(C) program. The increase from the amount enacted to the FY 1984 column of the FY 1985 budget is comprised of $584.0 million for the pay supplemental, $167.3 million for the program supplemental, and a net adjustment of transfers of $39.7 million. The pay supplemental is needed for a 4% military pay raise and 3-1/2% civilian pay raise which were effective 1 January 1984. The program supplemental covers funding for Lebanon and Grenada operations, including hostile fire pay for shore personnel, death gratuities, subsistence, clothing, foreign duty pay, family separation allowance, PCS costs, and O&M support. Replacement costs for lost equipment and expended ordnance are not included. The program supplemental also covers costs for increased social security taxes, health benefits, disability compensation and a fueling pier at Keflavik, Iceland. The transfers include funds for foreign currency fluctuation and $12.0 million to O&M,N for the BOSS (Buy Our Spares Smart) program which I discussed earlier.

FY 1985 BUDGET

Real Program Growth

The TOA for the Department of the Navy increases by $19.3 billion. Real program growth for the Department is 12.7%, or 13.5% for the Navy and 4.1% for the Marine Corps. While this figure is significant, it should be kept in mind that real growth declined by 3.6% in FY 1984. Since real growth is figured on a year-to-year basis the average real program growth for the Department of the Navy, FY 1984-85 is 4.2%, FY 1981-85 is 8.8%, FY 1978-85 is 5.2%. When figuring the real program growth between FY 1984 and FY 1985 we normalized for the effect of the retired pay accrual accounting transfer. This situation is portrayed on the following chart. The large increases in FY 1981, FY 1982, FY 1983 and again for FY 1985 were necessitated by the decline in real growth in prior years. Your support of this FY 1985 increase is needed so that the progress we have made can be continued.

CHART 2
DEPARTMENT OF THE NAVY REAL PROGRAM GROWTH



This chart is designed to provide you with a picture of the forces and manpower supported by the FY 1985 budget. I will amplify this chart with a brief discussion of the changes in FY 1985 from FY 1984. We will deliver two additional Tridents in FY 1985 and add a net 13 ships to the general purpose forces. This includes delivery of 17 new construction ships (3 ARS, 1 CG, 8 FFG, 1 LSD, 3 SSN, and 1 MCM), transfer of two FFGs to the Naval Reserve Force and two retirements (1 LSD, 1 FF). We are expanding the strategic sealift program, adding 1 near term prepositioning force (NTPF) ship for Army requirements. Two maritime prepositioning ships deliver in late FY 1984, and ten more will be added in FY 1985. These ships will provide lift for two Marine amphibious brigades but will not replace the NTPF ships. We are adding nine ships to the Ready Reserve Fleet for surge and resupply. We will deploy the 13th Airwing and are adding eight new squadrons.

CHART 3
SIGNIFICANT FORCE DATA

APPROPRIATION SUMMARY

The chart below summarizes the changes by appropriation that occur between FY 1984 and FY 1985. A significant policy change involving retired pay accrual was made in the military and reserve personnel appropriations which I will discuss in more detail later. Other substantial changes involve Operation and Maintenance, Navy; Aircraft Procurement, Navy; Shipbuilding and Conversion, Navy; Other Procurement, Navy; and Research, Development, Test and Evaluation, Navy appropriations. The details regarding these changes are discussed in subsequent sections of this statement.

CHART 4
APPROPRIATION SUMMARY

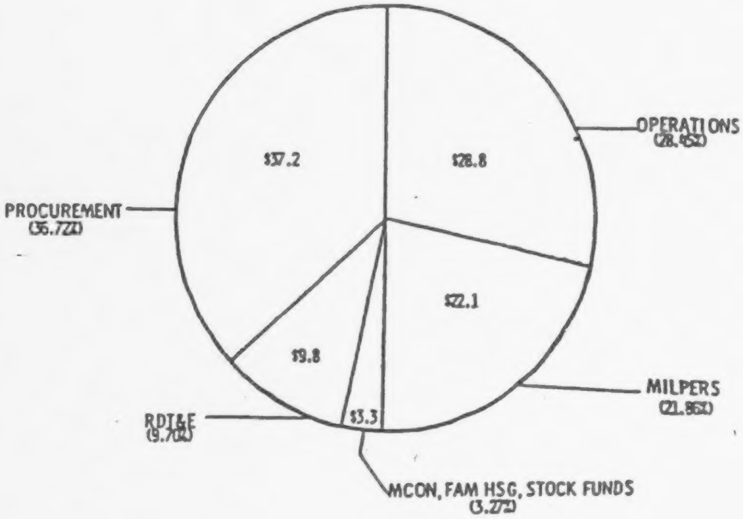
APPROPRIATION	FY 1983	FY 1984	FY 1985
MPN	10,821.4	11,450.9	15,897.5
MPMC	3,347.6	3,525.1	4,845.9
RPN	674.3	766.9	1,131.6
RPMC	169.9	179.6	269.5
O&MN	20,880.9	22,292.9	26,248.4
O&MMC	1,479.4	1,563.1	1,683.1
O&MNR	617.3	636.5	829.5
O&MMCR	50.5	52.3	58.6
APN	10,155.5	10,164.6	11,474.2
WPN	3,358.2	3,769.6	4,650.9
SCN	16,019.3	11,437.0	13,141.9
OPN	3,692.7	4,314.5	5,953.9
PMC	1,960.4	1,741.3	1,978.6
RDT&EN	6,100.1	7,571.7	9,826.1
NSF	354.4	632.9	563.9
MCSF	11.8	20.8	34.9
MCON	1,080.8	1,236.5	1,803.3
SMWPN	-	-	142.0
MCNR	25.2	30.6	60.8
FHN&MC	734.6	612.3	704.6
TOTAL	81,534.2	81,999.2	101,299.2

BUDGET COMPOSITION

I will now discuss the composition of the FY 1985 budget. The following chart shows the percentage of the Department of the Navy budget spent in each funding category. The percentages shown in this chart are skewed by the transfer of funds from Retired Pay, Defense to the four personnel accounts.

CHART 5
BUDGET COMPOSITION FY 1985
(IN BILLIONS OF DOLLARS)

We will now look at the appropriations included in the Department of the Navy budget in some detail.



OPERATING APPROPRIATIONS (ANNUAL ACCOUNTS)

Beginning in FY 1985, retirement benefits for future retirees are budgeted in the various personnel accounts rather than in the Retired Pay, Defense appropriation. This budget includes a total of $5.9 billion for retired pay accrual for future military retirees.

For the personnel appropriations, real program growth was calculated as if the retired pay accrual change had not occurred. This has the effect of showing only program growth. The FY 1984 funding discussed below assumes passage of the pay and program supplementals.

Military Personnel, Navy

The FY 1985 request of $15.9 billion will support an end strength of 575,300, an increase of 10,500 over the FY 1984 authorized program. This request is $4.4 billion higher than the FY 1984 level, $3.8 billion of which is for retired pay accrual. The increase in strength in FY 1985 provides for the new ships and squadrons being commissioned in FY 1985. In addition, provision is made for increases in general shore support elements. Also, there is a planned increase of 2,000 personnel to enhance medical care for members and their dependents and to provide adequate wartime casualty care. The increased medical care will be evidenced in the Nurse Corps community, hospital corpsman community, and the Medical Corps/Medical Service communities. This increased capability will result in improved quality of care, a reduction in CHAMPUS cost to DOD, and a reduction in the out-of-pocket costs to spouses.

Real program growth for the Military Personnel, Navy appropriation is 4.6% in FY 1985. Chart 6 provides summary financial and personnel strength data for this appropriation.

CHART 6
DEPARTMENT OF THE NAVY
MILITARY PERSONNEL, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
PAY OF OFFICERS	2,513.3	2,638.4	3,719.5	+1,081.1
PAY OF ENLISTED	7,097.0	7,477.7	10,756.4	+3,278.7
PAY OF MIDSHIPMEN	34.0	33.9	34.4	+ .5
SUBSISTENCE	655.4	690.9	719.8	+ 28.9
PCS TRAVEL	517.7	566.6	613.4	+ 46.8
OTHER COSTS	4.0	43.5	54.1	+ 10.6
Total: MILITARY PERSONNEL, NAVY	10,821.4	11,450.9	15,897.5	+4,446.6
		END STRENGTH		
OFFICERS	68,494	68,489	71,973	+ 3,484
ENLISTED	484,568	491,786	498,802	+ 7,016
MIDSHIPMEN	4,511	4,525	4,525	-
TOTAL END STRENGTH	557,573	564,800	575,300	+10,500

Military Personnel, Marine Corps

The FY 1985 budget request of $4.8 billion will support an active duty end strength of 199,500, an increase in active force structure end strength of 2,900 needed to enhance readiness, mobility and firepower. This is an increase of $1.3 billion over FY 1984, $1.2 billion of which is due to retired pay accrual. The remaining $100.0 million increase includes the addition of two heavy antitank missile platoons armed with TOW; a 155 mm self-propelled artillery battery; a target acquisition battery; a light anti-aircraft missile battalion; the transition of a direct support artillery regiment from the older 105mm howitzer to the more modern M198, 155mm howitzer; and the ongoing activation of forward air defense platoons. A second light armored vehicle battalion, a CH-53E helicopter squadron and a CH-46 helicopter squadron will also be activated.

Real program growth for the Military Personnel, Marine Corps appropriation is 1.7% in FY 1985. Chart 7 provides summary financial and personnel strength data for this account.

CHART 7
DEPARTMENT OF THE NAVY
MILITARY PERSONNEL,
MARINE CORPS
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
PAY OF OFFICERS	654.2	702.3	987.3	+285.0
PAY OF ENLISTED	2,284.2	2,354.1	3,373.7	+1,019.6
SUBSISTENCE	230.8	245.5	250.1	+4.6
PCS TRAVEL	176.4	196.4	205.9	+9.5
OTHER COSTS	2.0	26.9	28.8	+1.9
TOTAL: MILITARY PERSONNEL, MARINE CORPS	3,347.6	3,525.1	4,845.9	+1,320.8
		END STRENGTH		
OFFICERS	19,983	20,186	20,266	+80
ENLISTED	174,106	176,414	179,234	+2,820
TOTAL END STRENGTH	194,089	196,600	199,500	+2,900

Reserve Personnel, Navy

The FY 1985 funding request of $1.1 billion displayed in Chart 8 supports an average reserve strength of 124,200, an increase of 8,700 over the FY 1984 level. Of the $364.7 million increase over FY 1984, $283 million is due to retired pay accrual. The increase of 6,946 in the average strength level of Selected Reserves and Sea/Air Mariners is designed to attain the Navy Manpower Mobilization System (NAMMOS) strength level of 124,000 by FY 1988, driven by the expansion of the Naval Reserve Force (NRF) and the NRF maintenance facilities. In FY 1985 we are increasing the School and Special Training Tours and the Reserve Incentive Programs.

Real program growth for this account is 8.4% in FY 1985. Chart 8 provides summary financial and personnel strength data for the Reserve Personnel, Navy appropriation.

CHART 8
DEPARTMENT OF THE NAVY
RESERVE PERSONNEL, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
UNIT AND INDIVIDUAL TRAINING	346.1	394.6	588.2	+193.6
OTHER TRAINING AND SUPPORT	328.2	372.3	543.4	+171.1
TOTAL: RESERVE PERSONNEL, NAVY	674.3	766.9	1,131.6	+364.7
		AVERAGE STRENGTH		
SELECTED RESERVES	93,064	100,196	106,347	+6,151
SEA/AIR MARINERS	1,197	2,508	3,303	+795
TAR PERSONNEL	11,607	12,796	14,550	+1,754
TOTAL AVERAGE STRENGTH:	105,868	115,500	124,200	+8,700

Reserve Personnel, Marine Corps

The FY 1985 budget request of $269.5 million will support an increased reserve force structure and drilling strength of 2,564 in FY 1985 with the goal of achieving full wartime strength by FY 1986. This appropriation increases by $89.9 million over FY 1984, of which $65.0 million is due to retired pay accrual. We are starting up new units (including a beach and post operations company, three longshoremen platoons, one air delivery platoon, two civil affairs groups, two salvage platoons, one bridge platoon, and one air naval gunfire liason company), bringing units out of cadre status, and filling personnel deficiencies in existing units, completely manning three longshoremen platoons, one beach and port operations company, one air delivery platoon and medical and dental battalions. Additional full time support personnel are added to support these increases in the selected Marine Corps Reserve units, to augment management functions, adequately staff the Marine Corps Reserve Support Center, and support the 4th Marine Aircraft Wing surge capability as it assumes contingency missions associated with active F-4 Squadron transitions to F/A-18 aircraft.

Real program growth for this account is 10.9% in FY 1985. Chart 9 contains summary financial and personnel strength data for the Reserve Personnel, Marine Corps appropriation.

CHART 9
DEPARTMENT OF THE NAVY
RESERVE PERSONNEL, MARINE CORPS
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
UNIT AND INDIVIDUAL TRAINING	127.6	129.1	189.9	+60.8
OTHER TRAINING AND SUPPORT	42.3	50.5	79.6	+29.1
TOTAL: RESERVE PERSONNEL, MARINE CORPS	169.9	179.6	269.5	+89.9
		AVERAGE STRENGTH		
AVERAGE STRENGTH:	41,372	42,100	44,300	+2,200

This completes my discussion of the military personnel accounts. I will continue with a discussion of the operation and maintenance accounts and the stock funds totalling $29.4 billion.

Operation and Maintenance, Navy

The FY 1985 O&M,N appropriation request of $26.2 billion is an increase of $3.96 billion over FY 1984. As in FY 1984, emphasis continues in this budget on improving readiness, supporting Navy operating forces with maintenance of ships, Navy and Marine aircraft, weapons, and support equipment.

The FY 1985 increases in strategic programs are attributable to Ship Maintenance and Modernization and the Trident program. We have added one additional ship overhaul. In addition, increases in the Command, Control and Logistic support for the Trident program are due to the increasing number of operational submarines and the development of the East Coast Trident site at Kings Bay, Georgia.

The Navy's general purpose forces include 480 ships and 3,329 average operating aircraft, and a network of shore installations and commands. Increases in this category occur in ship maintenance, fleet outfitting, flying hours, and base support. The flying hour program provides 1,364 thousand hours to allow combat aircrews (both Navy and Marine) to maintain proficiency to conduct aircraft operations at 86 percent Primary Mission Readiness (PMR) including 2 percent simulator contribution. Primary mission readiness is the percentage accomplished of the flying hours required to keep air crews qualified to perform their primary mission in assigned aircraft. The program also includes flying hours for aircrew training in Fleet Readiness Squadrons and fleet air support operations.

Ship operating tempo is budgeted at 29 days per ship per quarter for the non-deployed fleet and 50.5 days per quarter for the deployed fleet. The increase in the FY 1985 ship operations program reflects the larger force with more operational ship months than in FY 1984. No funding is requested for contingency operations such as occurred in Lebanon and Grenada.

In ship maintenance, we have increased the number of overhauls by 2 over FY 1984, and reduced the backlog that will remain at the end of FY 1985 to two ships. In addition, the mix of overhauling ships will be more complex (e.g. 10 SSNs vice 5, 6 FFs/FFGs vice 14). We are continuing to expand the use of selected restricted availabilities (SRAs) for ships on extended operating cycles and phased maintenance, adding 13 SRAs and 7 phased maintenance availabilities in FY 1985. We are using lessons learned from the Falklands and Grenada experiences to enhance combat readiness of the fleet. Examples include enhancing passive fire safety by issuing fire retardant coveralls to fire room and fire party personnel, accelerating installation of CIWS on ships, and increasing reliance on merchant shipping to meet contingincy sealift requirements. This increased reliance includes purchase of 9 additional ships for the RRF and enhancing sealift features on commercial ships.

The funding request includes start-up costs for a new construction battalion and funding for five additional T-AGOS undersea surveillance ships.

In FY 1984, a new budget activity was added to identify funding for airlift and sealift. Increases budgeted in FY 1985 provide funds to operate a lighter-aboard ship (TALS), part of the near term prepositioning force, to be used to transport U.S. Army equipment; ten more maritime prepositioning ships (MPS); and nine more commercial ships for the RRF. Also, as directed by Congress, the partial reserve funding for termination liability of the TAKX (MPS) and T-5 tanker charter programs was increased to reflect FY 1985 deliveries.

In order to minimize the effect of a growing inventory of increasingly complex, state-of-the-art weapons and weapon systems on the depot level maintenance program, we have implemented several Grace Commission recommendations in the aircraft rework program and are transferring funding of aviation depot level repairables (DLRs) to the Navy Stock Fund. We believe this management action will lower costs and improve readiness by providing an incentive for local repairs of spares where possible.

Additional personnel and funding are budgeted in FY 1985 to continue to improve physical inventory at supply depots and to expedite material processing. These efforts have been accelerated as a result of recommendations made by the Grace Commission. The resources to support the Buy Our Spares Smart (BOSS) initiative, which will improve spare parts pricing, inventory control, and standardization are expected to bring future savings. Other program growth provides for accomplishing critical facility maintenance and repair projects, the upgrade of Unaccompanied Enlisted Personnel Housing Navy-wide, and the procurement of collateral equipment for the San Diego Naval Medical Center.

The budget request includes increases in training for various categories including specialized skill training; contract maintenance for the T-2C aircraft used in flight training; undergraduate Naval Flight Officer/Technical Support Upgrade for contractor flight services; pilot training rate increases; and initial (factory) training for course development and instructor services on new and modified weapons systems and equipment.

As military end strength grows, we must provide health care for more dependents. The budget request provides for additional clinical workload in Naval Medical facilities which would otherwise be funded by the more expensive CHAMPUS. Beginning in FY 1985, responsibilities for operational systems of the Tri-Service Medical Information System (TRIMIS) are being transferred to the Military Departments.

Other increases include cost growth for the Veterans Educational Assistance Program; efforts to reverse the deteriorating condition of training and medical plant property; and automated data processing operations in support of military and civilian personnel pay and support systems.

Real program growth in the Operation and Maintenance, Navy appropriation is 14.5%. Chart 10 provides summary financial data for this account.

CHART 10
DEPARTMENT OF THE NAVY
OPERATION AND MAINTENANCE, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
STRATEGIC FORCES	1,661.6	1,946.4	2,271.6	+325.2
GENERAL PURPOSE FORCES	10,345.7	10,338.5	12,209.0	+1,870.5
INTELLIGENCE & COMMUNICATIONS	927.3	1,052.0	1,147.9	+95.9
AIRLIFT & SEALIFT	-	321.9	553.8	+231.9
CENTRAL SUPPLY & MAINTENANCE	5,637.1	5,982.0	6,957.9	+975.9
TRAINING, MEDICAL & GENERAL PERSONNEL SUPPORT ACTIVITIES	1,841.7	1,993.4	2,399.2	+405.7
ADMINISTRATION & ASSOC. ACTIVITIES	467.3	656.3	706.5	+50.2
SUPPORT OF OTHER NATIONS	0.2	2.5	2.5	0.0
TOTAL: OPERATIONS AND MAINTENANCE, NAVY	20,880.9	22,292.9	26,248.4	+3,955.5

Operation and Maintenance, Marine Corps

The FY 1985 budget request for O&M,MC of $1.7 billion, an increase of $120.0 million above the FY 1984 level, will support Fleet Marine Forces (FMF) of three active divisions, three aircraft wings and their combat and service support units; the operation and maintenance of training bases; the Marine Corps supply system; Marine detachments and security forces; and administration and associated activities.

The increase provides support for the standup of the first and second Maritime Prepositioning Ship brigades including receipt and preparation of supplies and equipment, transportation, routine cyclic maintenance, and a medical support package. The request also provides increased support for the continued procurement of initial issue expense items for FMF units in combat and training operations; transportation of new weapons systems and equipments; increased training support to support training for new equipments, off duty education and formal schools/factory training; and increased funding for equipment maintenance. The budget provides increased support for base communications to support expanding Marine Corps Data Network requirements.

Real program growth is 4.1% for O&M,MC in FY 1985. Chart 11 provides summary financial data for this appropriation.

CHART 11
DEPARTMENT OF THE NAVY
OPERATION AND MAINTENANCE, MARINE CORPS
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
GENERAL PURPOSE FORCES	865.5	915.4	933.0	+ 17.6
LAND FORCES	254.1	289.4	296.7	+ 7.3
NAVAL FORCES	16.3	17.8	17.4	- .4
TACTICAL AIR FORCES	41.0	32.8	32.4	- .4
BASE SUPPORT	554.1	575.4	586.5	+ 11.1
CENTRAL SUPPLY AND MAINTENANCE	347.8	338.8	397.6	+ 58.8
SUPPLY SYSTEM OPS	109.7	97.5	109.5	+ 12.0
TRANSPORTATION	37.9	58.3	66.5	+ 8.2
LOG SUPPORT	32.2	20.2	26.0	+ 5.8
EQUIP MAINT	102.2	106.2	123.9	+ 17.7
BASE SUPPORT	65.8	70.8	73.9	+ 3.1
MCIF & MCSF SUPPORT	-	-14.2	-2.2	+ 12.0
TRAINING, MEDICAL AND OTHER GENERAL PERSONNEL ACTIVITIES	193.0	211.7	241.7	+ 30.0
TRAIN & EDUCATION	44.7	48.7	66.9	+ 18.2
GEN PERS ACTIVITIES	59.7	61.4	67.2	+ 5.8
BASE SUPPORT	88.6	101.6	107.6	+ 6.0
ADMINISTRATION AND ASSOCIATED ACTIVITIES	73.1	97.3	110.8	+ 13.5
TOTAL: OPERATION AND MAINTENANCE, MARINE CORPS	1,479.4	1,563.1	1,683.1	+120.0

Operation and Maintenance, Navy Reserve

The FY 1985 Operation and Maintenance, Navy Reserve request of $829.5 million is $193.0 million above FY 1984.

The increased funding level will provide additional support for the following areas of significant growth: migration of aviation depot level repairables to customer funding; increased aircraft operating, maintenance and rework costs in support of a more modern mix of aircraft and the Squadron Augment Unit program; increased operations, maintenance and modernization costs due to the growth in the Naval Reserve Force ASW Frigate Program and a more costly mix of ship overhaul requirements; and increased training, equipment, and base operating support requirements caused by growing Selected Reserve strength levels. In addition, an increase of $8.7 million is requested to support Naval Reserve recruiting and advertising activities. Of that amount, $5.6 million represents a functional transfer from the O&MN appropriation to provide proper program visibility in light of the expanding role of the Naval Reserve, with the remainder required to support recruiting efforts for the Sea/Air Mariner program.

Real program growth in FY 1985 is 26% for the Operation and Maintenance, Navy Reserve appropriation. Chart 12 provides summary financial data for this account.

CHART 12
DEPARTMENT OF THE NAVY
OPERATION AND MAINTENANCE, NAVY RESERVE
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
MISSION FORCES	361.1	373.3	477.6	+104.3
AIR RESERVE FORCES	212.4	210.5	291.3	+80.8
SHIP OPERATIONS AND SURFACE SUPPORT	48.4	52.4	55.2	+2.8
SHIP MAINTENANCE AND MODERNIZATION	100.3	110.4	131.1	+20.7
DEPOT MAINTENANCE	106.7	90.5	154.0	+63.5
AIRCRAFT MAINTENANCE AND SUPPORT	115.8	115.5	154.0	+38.5
NIF & NSF SUPPORT	-9.1	-25.0	-	+25.0
OTHER SUPPORT	149.5	172.6	197.9	+25.3
MAINTENANCE AND REPAIR OF REAL PROPERTY	32.9	35.5	41.1	+5.6
RECRUITING AND ADVERTISING	-	-	8.7	+8.7
BASE SUPPORT	116.6	137.1	148.1	+11.0
TOTAL: OPERATION AND MAINTENANCE, NAVY RESERVE	617.3	636.5	829.5	+193.0

Operation and Maintenance, Marine Corps Reserve

The FY 1985 budget request of $58.6 million, an increase of $6.3 million above the FY 1984 level, supports the day-to-day costs of operating the Marine Corps Reserve Forces. More funds are requested for training readiness in order to provide for travel for Military Occupational Specialty (MOS) training and training away from home sites as well as transportation of training equipment and supplies. The request reduces the current deficiency in chemical, biological and radiological defense equipment and body armor. An additional support package is also funded that will improve the management of individual reservists and improve mobilization readiness.

Real program growth for the Operation and Maintenance, Marine Corps Reserve appropriation is 7.3% in FY 1985. Chart 13 provides summary financial data for the Operation and Maintenance, Marine Corps Reserve appropriation.

CHART 13
DEPARTMENT OF THE NAVY
OPERATION AND MAINTENANCE, MARINE CORPS RESERVE
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	CHANGE FY 1984 - FY 1985
MISSION FORCES	25.9	25.9	29.6	+3.7
DEPOT MAINTENANCE	1.5	1.6	1.7	+ .1
OTHER SUPPORT	23.1	24.8	27.3	+2.5
BASE OPERATIONS	13.4	14.3	14.6	+0.3
OTHER ACTIVITIES	9.7	11.2	12.7	+1.5
MCIF & MCSF SUPPORT	-	- .7	-	+ .7
TOTAL: OPERATION AND MAINTENANCE, MARINE CORPS RESERVE	50.5	52.3	58.6	+ 6.3

Stock Funds

The Navy and Marine Corps Stock Funds procure secondary items for peacetime operating stocks and for Prepositioned War Reserve (PWR) stocks.

The Navy Stock Fund resources for peacetime operating stocks will be used for support of force and equipment modernization and readiness initiatives. Navy Stock Fund PWR resources in FY 1985 will be used to procure material required to support ashore and afloat units at combat Marine Air Wings, various Advance Base Functional Components including deployed P-3 aircraft and Reserve Cargo Handling Battalions, medical supplies for Fleet Hospitals and afloat and shore units.

The Marine Corps Stock Fund resources for peacetime operating stock in FY 1985 will also be used for support of force and equipment modernization. PWR funding will be used for stocks of chemical, biological and radiological clothing, combat rations, and consumable repair parts for Marine Corps peculiar vehicles and equipment.

Chart 14 provides summary financial data for the Navy and Marine Corps Stock Fund appropriation requests.

CHART 14
DEPARTMENT OF THE NAVY
NAVY AND MARINE CORPS STOCK FUNDS
(IN MILLIONS OF DOLLARS)

NAVY STOCK FUND	FY 1983	FY 1984	FY1985	CHANGE FY 1984-FY 1985
PEACETIME OPERATIONS	230.0	590.5	488.1	-102.4
FORCE MODIFICATION	-	29.5	34.2	+4.7
FORCE AND EQUIPMENT MODERNIZATION	230.0	509.2	443.3	-65.9
READINESS INITIATIVES/SUSTAINABILITY	-	51.8	10.6	-41.2
PREPOSITIONED WAR RESERVE	124.4	42.4	75.8	+33.4
FLEET SUPPORT ELEMENT	82.0	42.4	55.2	+12.8
OVERSEAS BASE ELEMENT	14.0	-	4.2	+4.2
FLEET HOSPITALS	3.0	-	5.0	+5.0
FLEET MARINE FORCES	25.4	-	11.4	+11.4
TOTAL: NAVY STOCK FUND	354.4	632.9	563.9	-69.0
MARINE CORPS STOCK FUND				
PEACETIME OPERATIONS	-	-	3.5	+3.5
FORCE AND EQUIPMENT MODERNIZATION	-	-	3.5	+3.5
PREPOSITIONED WAR RESERVE	11.8	20.8	31.4	+10.6
ORDNANCE, ENGINEER	1.6	5.2	8.8	+3.6
COMMUNICATIONS PARTS	1.1	2.6	3.9	+1.3
CLOTHING & TEXTILE	1.8	13.0	12.9	-0.1
SUBSISTENCE	7.3	-	5.8	+5.8
TOTAL: MARINE CORPS STOCK FUND	11.8	20.8	34.9	+14.1

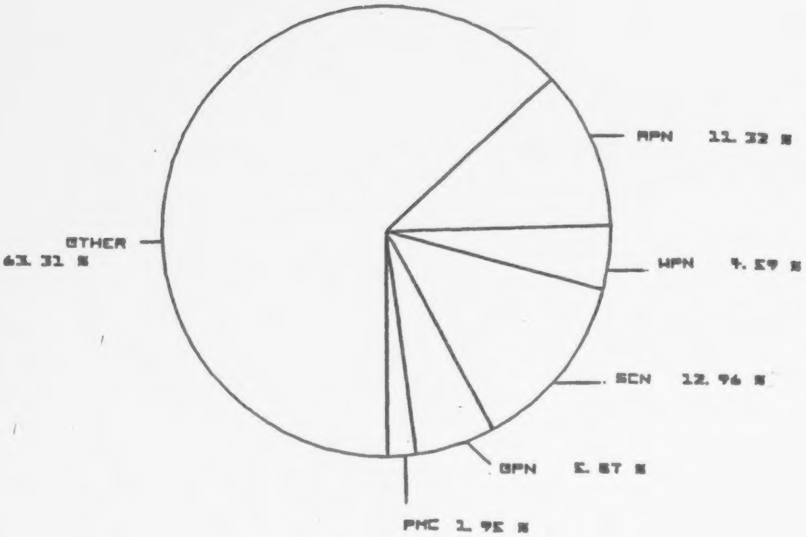
The next funding category to be discussed includes the investment and development appropriations.

INVESTMENT AND DEVELOPMENT APPROPRIATIONS

The nine procurement and investment accounts total $49.7 billion, roughly half of the total Department of the Navy budget. The FY 1985 request is $8.8 billion higher than the FY 1984 appropriation of $40.9 billion. The largest increase is the $2.3 billion increase in RDT&E,N due to various increases in tactical and strategic programs. There are also large increases in WPN and OPN, related to sustainability improvements.

The following chart shows the relative percentage of the DON budget included in each appropriation.

CHART 15
PROCUREMENT COMPOSITION



Aircraft Procurement, Navy

In FY 1985, $11.5 billion is requested to procure 287 aircraft and associated support requirements, modifications for existing aircraft, spares and repair parts, and other support equipment. The budget request provides for continued procurement of aircraft authorized in FY 1984 including the A-6E Intruder, EA-6B Prowler and F-14A Tomcat. The F/A-18 Hornet and AV-8B Harrier to be procured for both Navy and Marine Corp squadrons will significantly enhance fleet war-fighting capability. Our ability to combat the submarine threat will be improved with the increased production of P-3C Orions from five to nine. Procurement of 36 TH-57 Sea Ranger helicopters and 8 Adversary aircraft, both increased over FY 1984, will enhance critical training requirements. Funding for the CH/MH-53 helicopter includes funds for the initial two MH-53 mine sweeping aircraft. The CH/MH-53 program is included as a multiyear procurement candidate in the FY 1985 budget, with a current estimated savings of $129.3 million.

Reserve force airlift capabilities will be enhanced with procurement of additional C-9B transports to fill out the total requirement of 29 aircraft. FY 1985 procurement funds are not requested for the ECX aircraft. An in-depth analysis is in process to determine the most cost effective option to replace the aging EC-130Qs.

Important initiatives in the FY 1985 aircraft modification program include the digital engine control and engineering monitoring system for the AV-8; the S-3 Weapon System Improvement Program (WSIP); the OV-10 Service Life Extension Program (SLEP); and the countermeasures simulator set (ALQ-170) for the Fleet Electronic Warfare Support Group (FEWSG) aircraft. Some of the major ongoing modifications in FY 1985 APN Request are the A-6 re-wing; F-14 TF-30 engine improvement; OV-10A to OV-10D conversion; EA-6B Improved Capability II (ICAP II); KA-6 Reliability and Maintainability; service life extension programs for the H-3 and H-46 helicopters; E-2C TRAC A antenna; and the ALR-66/AQA-7 improvements for the P-3.

Funding for aircraft spares and repair parts reflects a concerted effort to enhance readiness. As discussed earlier in my statement, beginning in April 1985, the Navy Stock Fund will procure aviation Depot Level Repairables.

Real program growth for the Aircraft Procurement, Navy appropriation is 6.7% in FY 1985. Chart 16 provides summary financial and procurement quantity data for this account.

CHART 16
DEPARTMENT OF THE NAVY
AIRCRAFT PROCUREMENT
NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983		FY 1984		FY 1985		FY 1986	
	QTY	$	QTY	$	QTY	$	QTY	$
A-6E (INTRUDER)	8	217.9	6	213.4	6	214.6	-	98.1
EA-6B (PROWLER)	6	296.0	8	452.8	6	379.6	6	314.5
AV-8B (HARRIER)	21	741.5	27	793.6	32	822.6	46	1,013.2
F-14A (TOMCAT)	24	931.2	24	949.9	24	976.9	24	969.1
F/A-18A (HORNET)	84	2,469.6	84	2,318.4	84	2,686.0	102	2,861.7
CH-53E (SUPER STALLION)	11	212.3	11	186.9	10	292.9	14	306.2
AH-1T (SEA COBRA)	-	-	-	17.8	22	193.0	22	202.3
SH-60B (SEAHAWK)	27	620.0	21	438.0	18	385.6	18	376.3
CV ASW HELO	-	-	-	-	-	-	-	111.9
P-3C (ORION)	6	286.1	5	295.4	9	465.0	9	503.2
E-2C (HAWKEYE)	6	287.6	6	302.5	6	341.8	6	370.2
SH-2F	18	144.7	6	57.9	6	65.9	-	5.9
*C-9B (SKYTRAIN II)	TBD	14.1	TBD	-	TBD	33.9	-	-
UC-12B	-	-	-	-	12	32.0	24	67.0
C-2A COD	8	264.4	6	180.0	8	185.4	8	161.8
T-34C	30	25.8	-	4.8	-	-	114	125.4
TH-57	21	24.4	21	31.0	36	24.4	-	-
ADVERSARY	-	-	4	28.7	8	66.8	12	115.6
EC-130Q	-	37.9	-	-	-	-	-	-
KC-130T	2	37.8	2	47.3	-	-	-	-
ECX	-	-	-	97.7	-	-	3	349.7
FEWSG	-	-	1	20.1	-	-	-	-
MODIFICATION OF A/C	-	1,160.9	-	1,352.3	-	1,919.5	-	2,460.6
A/C SPARES & PARTS	-	1,959.2	-	1,963.2	-	1,609.7	-	1,526.9
A/C SUPPORT EQUIP & FACILITIES	-	423.5	-	413.0	-	778.7	-	882.9
TOTAL: AIRCRAFT PROCUREMENT, NAVY	272	10,155.5	232	10,164.6	287	11,474.2	408	12,822.5

*From FY 1983 thru FY 1985 C-9Bs will be procured in market-determined quantities not to exceed a total of twelve.

Weapons Procurement, Navy

The FY 1985 budget request of $4.7 billion for the Weapons Procurement, Navy (WPN) appropriation reflects an increase of $881.3 million over FY 1984.

Of this increase, $845.1 million is needed as an increment toward alleviating the shortage of missiles currently in the fleet.

FY 1985 funding for Fleet Ballistic Missile Programs has decreased by $198.6 million, primarily because FY 1984 will be the final year of TRIDENT I Missile procurement. Advance procurement for the TRIDENT II missile is requested in FY 1985.

We are increasing procurement of air-to-air missiles, surface-to-air missiles, and air-to-surface missiles. Funding for spares and repair parts, missile modifications, and support has increased as a result of the Navy's attempt to improve the Fleet's missile inventory position.

The MK-48 torpedo continues production at 144 per year, with a small procurement of MK-48 ADCAP kits. We are procuring large quantities of the MK-46 torpedo.

Real program growth for the Weapons Procurement, Navy account is 16.7% in FY 1985. Chart 17 provides summary financial and procurement quantity data for this appropriation.

CHART 17
DEPARTMENT OF THE NAVY
WEAPONS PROCUREMENT, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983		FY 1984		FY 1985		FY 1986	
	QTY	$	QTY	$	QTY	$	QTY	$
FBM PROGRAMS		667.4		578.4		379.8		933.3
TRIDENT I (C-4)	62	633.7	52	549.9	-	163.8	-	109.2
TRIDENT II (D-5)	-	-	-	-	-	162.9	-	758.0
OTHER	-	33.7	-	28.5	-	53.1	-	66.1
OTHER MISSILES		2,023.6		2,383.9		3,229.0		4,241.8
TOMAHAWK	51	207.5	124	326.2	180	560.1	180	549.0
SPARROW	620	129.4	695	152.2	1250	258.0	1692	340.8
SURFACE TO AIR	1150	590.4	1190	621.2	1410	724.6	2565	1218.7
AIR TO AIR	608	275.2	615	354.3	1400	512.4	1787	600.9
AIR TO SURFACE	293	127.5	785	244.4	2031	475.2	3934	531.5
HARPOON	223	210.2	313	280.6	354	327.1	360	336.0
OTHER	-	483.4	-	405.0	-	371.5	-	664.9
TORPEDOES & RELATED EQUIP		508.5		650.8		799.0		1,020.4
TORPEDO MK-48	144	117.3	144	122.0	144	127.7	144	155.5
TORPEDO MK-46	440	117.2	1,200	212.9	1,565	256.0	1,521	313.2
CAPTOR	300	101.7	300	104.7	300	128.5	-	-
MK-30 MOBILE TARGET	5	18.4	7	17.4	6	21.3	6	18.7
MK-48 ADCAP	-	26.6	18	77.7	23	108.9	96	269.4
OTHER	-	127.3	-	116.1	-	156.6	-	263.6
OTHER WEAPONS PROCUREMENT		158.7		156.5		243.1		253.0
CLOSE-IN WEAPON SYSTEM	37	109.2	40	120.3	51	163.9	43	144.9
OTHER	-	49.5	-	36.2	-	79.2	-	108.1
TOTAL: WEAPONS PROCUREMENT, NAVY	-	3,358.2		3,769.6	-	4,650.9	-	6,448.5

Shipbuilding and Conversion, Navy

The Shipbuilding and Conversion, Navy (SCN) appropriation request for FY 1985 is $13.1 billion. These funds will provide for 23 new construction ships and six conversions and reactivations. Also included are funds for landing and service craft, advance procurement funding for future ships, and funding for outfitting and post delivery costs. This is the first budget in four years in which there are no funds requested for cost growth on prior year programs.

The new construction ships requested include one TRIDENT submarine, four SSN-688 Class submarines, three AEGIS cruisers, two LSD-41 Class Dock Landing ships, four Mine Countermeasures ships, three Fleet Oilers and three Ocean Surveillance ships. Authorization is being requested in FY 1985 for the first of a new class of destroyer, the DDG-51. This ship will be configured with the AEGIS combat system and will use the upgraded SPY-1D radar. Also included are two ocean survey ships (TAGS). We are reactivating the third battleship, MISSOURI; INDEPENDENCE is entering the service life extension program, and we are converting an FBM supply ship (TAK), two aviation support ships (TAVB) and an auxiliary crane ship (TACS).

The FY 1985 request contains $31.0 million for procurement of strategic sealift ships for the Ready Reserve Fleet.

Real program growth for SCN is 9.1% in FY 1985. Chart 18 provides summary financial and procurement quantity data for this appropriation for FY 1985.

CHART 18
DEPARTMENT OF THE NAVY
SHIPBUILDING AND CONVERSION, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983		FY 1984		FY 1985		FY 1986	
	QTY	$	QTY	$	QTY	$	QTY	$
NEW CONSTRUCTION								
TRIDENT SUBMARINE (SSBN)	1	1,526.5	1	1,671.8	1	1,755.0	1	1,843.3
ATTACK SUBMARINE (SSN-688)	2	1,409.5	3	1,990.1	4	2,880.0	4	2,873.7
AEGIS CRUISER (CG-47)	3	2,885.7	3	3,242.0	3	3,150.0	3	3,251.7
DESTROYER (DDG-51)	-	-	-	79.0	1	1,173.4	-	279.1
MINE COUNTERMEASURES SHIP (MCM)	1	99.0	3	286.1	4	349.5	4	388.0
COASTAL MINEHUNTER (MSH-1)	-	-	1	65.0	-	-	4	234.3
AIRCRAFT CARRIER (CVN-72/73)	2	6,499.8	-	-	-	-	-	-
DOCK LANDING SHIP (LSD-41)	1	413.6	1	401.0	2	489.5	2	519.0
AMPHIBIOUS ASSAULT SHIP (LHD-1)	-	55.0	1	1,365.7	-	39.2	1	1,365.5
OCEAN SURVEILLANCE SHIP (TAGOS)	-	-	-	-	3	192.9	3	189.7
FLEET OILER (TAO)	1	163.8	2	328.5	3	562.6	3	577.9
SALVAGE SHIP (ARS)	1	50.0	-	-	-	-	-	-
FRIGATE (FFG-7)	2	660.8	1	300.0	-	-	-	-
LANDING CRAFT AIR CUSHION (LCAC)	-	-	(6)	150.6	(9)	230.1	(12)	317.1
AMMUNITION SHIP(AE)	-	-	-	-	-	-	1	500.0
FAST COMBAT SUPPORT SHIP (AOE)	-	-	-	-	-	-	1	815.0
SURVEY SHIP (TAGS)	-	-	-	17.0	2	245.0	-	-
CONVERSION/ACQUISITION								
ACOUSTIC RESEARCH VESSEL (AG)(C)	-	-	-	-	-	-	1	69.4
AMPHIBIOUS SLEP	-	-	-	-	-	15.0	-	94.1
BATTLESHIP REACTIVATION	1	323.9	-	57.7	1	422.6	-	90.0
HOSPITAL SHIP (TAH)(C)	1	256.0	1	224.0	-	-	-	-
CV-SLEP	1	691.0	-	95.3	1	764.5	-	128.7
FBM SUPPLY SHIP (TAK)(C)	-	-	-	.9	1	91.1	-	-
RANGE SHIP (TAGM)(C)	-	-	-	-	-	-	-	46.9
STRATEGIC SEALIFT	-	-	-	31.0	-	31.0	-	31.0
COMBAT STORES SHIPS (TAFS)	-	-	1	10.5	-	-	-	-
TAKR(C)	-	44.0	4	221.0	-	-	-	-
AVIATION SUPPORT SHIP (TAVB)(C)	-	-	-	-	1	42.8	1	32.5
CRANE SHIP (TACS)(C)	-	-	-	-	2	44.0	-	-
ESCALATION ON PY PROGRAMS	-	64.2	-	-	-	-	-	-
OTHER COSTS	-	616.8	-	441.7	-	476.7	-	457.0
COST GROWTH	-	259.7	-	458.1	-	-	-	-
POTENTIAL COST GROWTH	-	-	-	-	-	187.0	-	-
TOTAL: SHIPBUILDING AND CONVERSION, NAVY	17/16,019.3		22/11,437.0		29/13,141.9		29/14,103.9	

Other Procurement, Navy

The FY 1985 budget request of $6.0 billion for the Other Procurement, Navy appropriation is $1.6 billion higher than FY 1984, reflecting a continuing effort to modernize the fleet, improve readiness and sustainability, and update shore facilities.

We have increased funding for reconnaissance, electronic warfare, and communications equipment to support fleet modernization efforts.

The $420.8 million increase over FY 1984 in procurement of sonobuoys and air-launched ordnance will provide for the attainment of 71% of our acquisition objective for sonobuoys and 83% of the air-launched ordnance acquisition objective.

The $328.4 million increase in ordnance support equipment will fill 66% of our ship gun ammunition acquisition objective and provide critical ordnance equipment to support the Fleet Modernization Program.

The budget request for Personnel and Command Support Equipment is $528.5 million, a $248.6 million increase over FY 1984. $187.6 million of this increase is for general purpose computers. A major initiative to purchase currently leased equipment was initiated in FY 1984 at Congressional direction. The large FY 1985 budget request for general purpose computer procurement funds is dictated both by this initiative and by the number of systems that have reached the point of equipment acquisition in the systems development cycle. This increase is partially offset by reductions in the operating account.

Real program growth for the Other Procurement, Navy account is 36.2% in FY 1985. Chart 19 provides summary financial data for this appropriation.

CHART 19
DEPARTMENT OF THE NAVY
OTHER PROCUREMENT, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	FY 1986
SHIPS SUPPORT EQUIPMENT	533.6	666.5	857.1	1,331.2
COMMUNICATIONS AND ELECTRONICS EQUIP	1,412.6	1,513.4	1,813.8	2,488.7
AVIATION SUPPORT EQUIPMENT	565.9	660.7	1,081.5	1,143.2
ORDNANCE SUPPORT EQUIPMENT	695.0	901.2	1,229.6	1,843.8
CIVIL ENGINEERING SUPPORT EQUIPMENT	169.6	186.4	313.3	432.5
SUPPLY SUPPORT EQUIPMENT	87.8	106.4	130.1	144.0
PERSONNEL AND COMMAND SUPPORT EQUIP	228.1	279.9	528.5	569.0
TOTAL: OTHER PROCUREMENT, NAVY	3,692.7	4,314.5	5,953.9	7,952.4

Procurement, Marine Corps

The Procurement, Marine Corps budget request for FY 1985 is $2.0 billion, an increase of $237 million over the FY 1984 appropriated program. It provides for continued enhancement of readiness through the acquisition of new weapon systems for firepower intensive battalions. FY 1985 provides for the completion of the present procurement plans for the Light Armored Vehicle (LAV) and Amphibious Assault Vehicles (LVT7A1). It also provides for increased mobility with continued acquisition of the High Mobility Multipurpose Wheeled Vehicles (HMMWV) and the Logistics Vehicle System (LVS). The LAV forms the basis of a unique, rapidly deployable combat unit with integrated combined arms capability. New initiatives have been held to a minimum.

The capability of existing equipment will be improved by a number of modification programs. These include completion of the service life extension program for the LVT7A1; HAWK Missile modifications and modification kits to convert and modernize old 5 ton trucks to the current M809 series, at a considerable cost savings.

Sustainability improvements are budgeted for FY 1985 which support overall readiness and the achievement of adequate levels of combat sustainability. For ammunition, 85% of the FY 1985 budget request is applied to pre-positioned war reserve, and 15% goes to peacetime consumption.

Real program growth for the Procurement, Marine Corps account is 7.7% in FY 1985. Chart 20 provides summary financial and procurement quantity data for this appropriation.

CHART 20
DEPARTMENT OF THE NAVY
PROCUREMENT, MARINE CORPS
(IN MILLIONS OF DOLLARS)

	FY 1983		FY 1984		FY 1985		FY 1986	
	QTY	$	QTY	$	QTY	$	QTY	$
AMMUNITION		448.5		414.4		460.5		552.5
WEAPONS AND TRACKED COMBAT VEHICLES		446.0		440.7		467.4		200.8
LVT 7A1 PROCUREMENT	146	105.3	153	88.9	4	3.5	-	-
LVT7 SLEP	307	125.9	263	116.2	240	115.9	-	-
LIGHT ARMORED VEHICLE (LAV)	134	94.7	236	170.6	292	274.8	-	-
ALL OTHER	-	120.1	-	65.0	-	73.2	-	200.8
GUIDED MISSILES		239.5		170.9		283.2		368.8
HAWK	211	75.4	400	97.0	500	125.1	482	126.9
STINGER	1560	99.5	691	40.0	800	75.6	2055	136.6
TOW	1000	28.6	2200	29.6	3822	56.1	4014	50.5
OTHER	-	36.0	-	4.3	-	26.4	-	54.8
COMMUNICATIONS/ELECTRONICS		433.7		279.3		295.9		631.9
POSITION LOCATION REPORTING SYSTEM (PLRS)	2	44.2	2	52.3	1	27.2	2	58.2
MOD UNIV LASER EQUIP. (MULE)	115	37.3	134	43.7	115	40.0	-	-
ALL OTHER	-	352.2	-	183.3	-	228.7	-	573.7
SUPPORT VEHICLES		186.4		277.7		274.0		317.5
5 TON TRUCKS	1045	82.6	1014	86.6	610	57.7	465	47.6
5 TON RETROFIT	175	3.8	560	13.4	732	17.2	691	17.9
LOGISTICS VEHICLE SYSTEM (LVS)	-	28.2	-	29.0	-	66.7	-	74.3
HIGH MOBILITY MULTI-WHEELED VEH (HMMWV)	1924	40.2	3838	87.2	3123	75.0	4793	120.8
ALL OTHER	-	31.6	-	61.5	-	57.4	-	56.9
ENGINEER AND OTHER SUPPORT EQUIPMENT		206.3		158.3		197.6		279.4
TOTAL: PROCUREMENT, MARINE CORPS		1,960.4		1,741.3		1,978.6		2,350.9

Research, Development, Test and Evaluation, Navy

The FY 1985 budget estimate for the Research, Development, Test and Evaluation, Navy (RDT&E,N) appropriation is $9.8 billion. Although this is $2.3 billion higher than the FY 1984 revised budget, it is only 9.8% of the Navy budget which is lower than our historical average and lower than the DOD average of 10.4% for R&D.

The budget provides funding for the Technology Base of $828.2 million in Research ($349.7 million) and Exploratory Development ($478.5 million). A request of $286.4 million is included for Advanced Technology Development. Strategic programs are funded at $2.4 billion and include $2.1 million for the TRIDENT II program, $618 million more than FY 1984.

Tactical programs are funded at $5.2 billion, $1.3 billion higher than FY 1984. A number of tactical systems are now at the stage of major development, including the DDG-51 destroyer, the New Design SSN, the F-14 and A-6 improvement programs, and the JVX aircraft. Several other systems are now in full scale development. Of particular significance are the Submarine Advanced Combat System (SUBACS) slated for the submarines authorized in FY 1983, the MK-50 Advanced Lightweight Torpedo, and the Joint Tactical Information System (JTIDS). The growth in tactical programs is due to such increases as JTIDS, +$32.1 million, SUBACS, +$75.4 million, JVX, +$111.0 million, F-14D, +$252.0 million, and New Design SSN, +$127.3 million.

Intelligence and Communications programs are funded at $421.5 million and the request for Defense-Wide Mission Support is $686.4 million.

Real program growth for the RDT&E,N appropriation is 24%. In Trident alone, the growth is about 36%, with approximately 25% growth in tactical programs, which were level funded between 1983 and 1984 as a result of Congressional decisions. Only 5% real growth is proposed in our Management and Support and Technology Base. There has been a major improvement in efficiency reflected in this RDT&E budget. We have reduced the total number of programs from 532 three years ago to 421 this year.

Chart 21 provides summary financial data for the appropriation and for selected major R&D programs.

CHART 21
DEPARTMENT OF THE NAVY
RESEARCH, DEVELOPMENT, TEST
AND EVALUATION, NAVY
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985	FY 1986
TECHNOLOGY BASE	833.2	760.5	828.2	940.1
ADVANCED TECHNOLOGY DEVELOPMENT	149.8	175.8	286.4	364.3
STRATEGIC PROGRAMS	630.4	1,767.2	2,380.1	2,602.9
TACTICAL PROGRAMS	3,614.3	3,891.4	5,223.5	6,548.0
INTELLIGENCE AND COMMUNICATIONS	266.8	337.3	421.5	408.9
DEFENSE WIDE MISSION SUPPORT	605.6	639.6	686.4	811.7
TOTAL: RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY	6,100.1	7,571.7	9,826.1	11,676.1

Military Construction

While this committee does not normally review Military Construction and Family Housing, the following is a brief overview of these appropriations for your information.

The FY 1985 budget request totals $2.0 billion for military construction including $1.8 billion for Military Construction, Navy, $60.8 million for support of the Reserves and $142.0 million for the Santa Margarita Water Project.

Construction at King's Bay in support of the Trident program is a major program in FY 1985 and includes the Strategic Weapons Facility, $81.7 million; the Refit Wharf and Industrial Facility, $58.0 million; and the Trident Training Facility, $59.7 million.

Waterfront Support for the Navy expansion program is also included in FY 1985. This support includes construction at the Naval Station, Treasure Island, $29.2 million; Naval Submarine Base, San Diego, $25.9 million; and Naval Station, Norfolk, $15.1 million.

Other significant programs include the Training Equipment Center at Orlando, Florida, $23.5 million; Unaccompanied Personnel Housing, $203.9 million; the Replacement/Modernization Program, $350.7 million, including $17.0 million for the Terminal Equipment building at Whidbey Island, Washington, $15.1 million for Data Processing Center at Mechanicsburg, Pennsylvania deferred from FY 1984 by the Congress, $13.2 million for a Maintenance Hangar at Marine Corps Air Station, Tustin, California, and $11.3 million for a Computer Programing Operations Center, San Diego, California; and the Energy Conservation Improvement Program, $26.1 million.

Santa Margarita Water Project

The FY 1985 budget requests $142.0 million for the Department of the Navy's share of the Santa Margarita water project. Under the terms of currently-pending Congressionally-sponsored legislation, the Santa Margarita water supply project provides for the construction of two dams, water delivery systems, and flood control features to harness the Santa Margarita River, part of which passes through the Camp Pendleton Marine Corps Base. The project is to be jointly financed by the Department of Interior, Department of Navy, and the Fallbrook, California Public Utility District. The Department of Interior will finance and manage the project with provision for reimbursement of their respective shares by the Department of the Navy and the Fallbrook Public Utility District. The total cost is estimated at $270.0 million, of which the Department of the Navy share is $142.0 million.

Real program growth for the Military Construction appropriation is 51.8% in FY 1985. Chart 22 provides summary financial data for the Military Construction, Navy, Military Construction, Naval Reserve, and Santa Margarita Water Project, Navy appropriations.

CHART 22
DEPARTMENT OF THE NAVY
MILITARY CONSTRUCTION
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985
MISSION/MAJOR SYSTEM SUPPORT	327.8	281.0	412.3
WATERFRONT SUPPORT	89.4	85.1	153.3
TRAINING FACILITIES	33.5	61.6	95.5
INDUSTRIAL BASE (SHIPYARDS, UTILITIES)	82.5	173.4	164.3
QUALITY OF LIFE	154.4	183.9	311.6
REPLACEMENT,MODERNIZATION OF OPERATIONAL FACILITIES)	166.7	239.2	350.7
RDT&E FACILITIES	17.2	29.5	42.0
REGULATORY COMPLIANCE	62.9	32.7	62.5
DEFENSE INTELLIGENCE	11.1	8.6	25.6
DESIGN, UMC, NATO	135.3	141.5	185.5
TOTAL: MILITARY CONSTRUCTION, NAVY	1,080.8	1,236.5	1,803.3
TOTAL: MILITARY CONSTRUCTION, NAVAL RESERVE	25.2	30.6	60.8
TOTAL: SANTA MARGARITA WATER PROJECT, NAVY	-	-	142.0

Family Housing, Navy and Marine Corps

The FY 1985 budget request for the Family Housing, Navy and Marine Corps appropriation is $704.6 million. This is $92.3 million higher than the FY 1984 request for $612.3 million.

The FY 1985 request consists of $119.5 million for new construction of a total of 893 units for the following locations: 405 units at Naval Station Adak, Alaska; 360 units at Marine Corps Base Camp Pendleton, California; 100 units at the Naval Station Guantanamo Bay, Cuba, and 28 units at Wallops Island, Virginia in support of the AEGIS land-based test site.

Real program growth for the Family Housing, Navy and Marine Corps appropriation is 10% in FY 1985. Chart 23 provides summary financial and program data for this account.

CHART 23
DEPARTMENT OF THE NAVY
FAMILY HOUSING, NAVY AND MARINE CORPS
(IN MILLIONS OF DOLLARS)

FAMILY HOUSING, NAVY	FY 1983	FY 1984	FY 1985	CHANGE FY 84-FY 85
NEW CONSTRUCTION	73.6	29.6	91.6	+62.0
CONSTRUCTION	47.7	17.3	76.0	+58.7
IMPROVEMENTS	21.3	6.7	9.0	+2.3
PLANNING & DESIGN	4.6	5.6	6.6	+1.0
OPERATION & MAINTENANCE	485.5	429.3	464.3	+35.0
OPERATIONS	216.6	190.0	201.7	+11.7
LEASING (INCL MARCORPS)	13.3	18.2	20.1	+1.9
MAINTENANCE	251.3	217.6	240.4	+22.8
DEBT PAYMENT	4.4	3.4	2.1	-1.3
TOTAL: FAMILY HOUSING, NAVY	559.1	458.9	555.9	+97.0
FAMILY HOUSING, MARINE CORPS				
NEW CONSTRUCTION	41.1	38.4	27.9	-10.5
CONSTRUCTION	16.7	30.5	26.0	-4.5
IMPROVEMENTS	23.5	6.5	-	-6.5
PLANNING & DESIGN	.9	1.4	1.9	+.5
OPERATION & MAINTENANCE	134.4	115.0	120.8	+5.8
OPERATIONS	47.5	47.7	48.6	+.9
MAINTENANCE	86.8	67.3	72.2	+4.9
DEBT PAYMENT	.1	.1	.1	-
TOTAL: FAMILY HOUSING, MARINE CORPS	175.5	153.4	148.7	-4.7
TOTAL: FAMILY HOUSING, NAVY AND MARINE CORPS	734.6	612.3	704.6	+92.3

FAMILY HOUSING SUMMARY DATA

NEW CONSTRUCTION PROJECTS	5	3	4
NAVY	3	1	3
MARINE CORPS	2	2	1
NEW CONSTRUCTION UNITS	731	730	893
NAVY	550	300	533
MARINE CORPS	181	430	360
AVERAGE NUMBER OF UNITS	97,352	89,674	90,142
NAVY	76,055	70,041	70,312
MARINE CORPS	21,297	19,633	19,830

CIVILIAN MANPOWER

Our most important resource is people, both military and civilian. The majority of the Department's civilian personnel directly support the readiness of our active forces. Civilian personnel are heavily involved with implementing the management improvements discussed earlier.

The budgeted civilian end-strength of 339,058 in FY 1983, 339,647 in FY 1984 and 339,566 in FY 1985 represents an essentially level request. The FY 1984 end-strength incorporates FY 1984 Defense Authorization Act reductions, including a 5% headquarters cut, as well as the Congressionally-directed accommodation of supply staffing growth. The FY 1984 estimate also reflects the lifting of civilian ceilings on industrial fund activities as provided in Section 771 of the FY 1984 Defense Appropriations Act. Finally, FY 1984 resources have been provided to implement the spare parts acquisition improvement program, Buy Our Spares Smart (BOSS), that I discussed earlier in my statement.

The FY 1985 request reflects a slight overall decrease in end strength from FY 1984. This includes changes in personnel phasing as well as some workload-related decreases at industrial fund activities, with increases at a number of non-industrial fund activities in direct readiness and other essential support areas such as supply, fleet support, Marine Corps programs, acquisition and facilities oversight, and intelligence and investigative programs.

Specific FY 1985 adjustments are summarized in Chart 24.

CHART 24
Civilian End-Strength

FY 1984 Revised	339,647
Industrial Workload/Personnel Phasing	-2,521
Central Supply	+390
Fleet Support	+327
Marine Corps Support	+445
Acquisition/Facilities Oversight	+294
Intelligence and Investigative Programs	+281
Other	+703
FY 1985 Total	339,566

Under the industrial fund civilian ceiling exemption in FY 1983, the Department of the Navy did realize limited benefits, primarily as a result of the flexibility to make workload phasing adjustments through retention of temporaries at the end of the fiscal year who otherwise would have been dropped to reach end-year ceilings. However, we have concluded that the short initial leadtime and duration of the exemption did not allow for a valid test, and that a three to five year period is needed to allow us to plan for meaningful workload and manpower adjustments. A detailed assessment has been provided to the Secretary of Defense for incorporation into a report for Congress. The Department continues to recommend elimination of all statutory civilian ceilings for both industrial and non-industrial fund employment. Civilian manpower levels should be determined by the level of funded program approved by Congress.

The Department of the Navy is also aggressively pursuing achievement of manpower economies and efficiencies. During FY 1983, we conducted A-76 cost studies on 6,400 civilian positions, of which 3,100 were determined to be more cost-effective when converted to contractor performance, at estimated annual savings of $26.3 million. The Department expects to continue to study about 6,000 positions per year over the next few years. Actual savings are reflected in the budget, but projected contracting-out adjustments are not shown in advance in compliance with Congressional direction. The Department is also implementing an Efficiency Review program for functions not subject to A-76 studies, and is participating in Defense Retail Interservice Support (DRIS) studies seeking cost-effective consolidation of interservice-compatible support functions.

I want to emphasize the relationship of our civilian employees to readiness. Over half of the work force in industrial fund activities is engaged primarily in depot level maintenance and repair of ships, aircraft and ordnance. Others provide essential readiness related supply support and base maintenance, while others are engaged in essential support functions at medical, engineering, acquisition, and research and development activities.

These personnel are essential in order to build, equip and maintain a 600-ship Navy and provide for increased Marine Corps capabilities.

A display of total DON civilian personnel is provided in Chart 25, below.

CHART 25
CIVILIAN MANPOWER SUMMARY

	FY 1983	FY 1984	FY 1985	FY 84-85 Change
Total - Department of the Navy	339,058	339,647	339,566	-81
Navy	317,684	318,315	317,727	-588
Marine Corps	21,374	21,332	21,839	+507

READINESS

Readiness indicators give us a way of summarizing the effect of budgetary changes on the Navy's ability to respond in a crisis. While the specific numbers may be open to question, these indicators clearly show an improving trend. Selected readiness data on aircraft and ship operation, ship maintenance, and aircraft rework are discussed below.

Fleet Operational Tempo

The increase in the flying hour program, shown in Chart 26, provides for seven new squadrons and an increase in primary mission readiness (PMR) to 86%. The FY 1985 program supports thirteen deployable airwings, and projects rather large achievable PMR increases for Marine Corps squadrons.

Ship operations are budgeted at 50.5 steaming days per ship per quarter for the deployed fleet and 29.0 days for the non-deployed fleet. The total cost of ship operations obviously increases as we grow toward the 600-ship Navy. Non-deployed and deployed allocations will continue as in FY 1984 with carrier battle groups deploying in many of the world-wide operating areas.

Summary resources and program data associated with these programs are displayed in Chart 26.

CHART 26
DEPARTMENT OF THE NAVY
FLEET OPERATIONAL TEMPO

AIRCRAFT FLYING HOUR PROGRAM	FY 1983	FY 1984	FY 1985
ACTIVE FORCES (% OF PRIMARY (MISSION READINESS) 1/	83.0	83.0	86.0
FLEET READINESS SQUADRONS (% OF PRIMARY MISSION READINESS)	100.0	100.0	100.0
FLEET SUPPORT (% OF REQUIREMENT BUDGETED)	86.0	80.0	82.0
RESERVE FORCES (HOURS PER PILOT PER YEAR)	139.3	127.0	140.5
SHIPS - STEAMING DAYS PER QTR			
ACTIVE FORCES			
DEPLOYED	55.5 2/	52.7 3/	50.5 4/
NON-DEPLOYED	27.0	29.2 3/	29.0 4/
RESERVES	14.7	14.7	14.7

1/ Includes 2% simulators
2/ FY 1983 actual, including Lebanon operations.
3/ Assumes passage of program supplemental for Grenada and Lebanon operations.
4/ No funding is requested for contingency operations.

Ship Maintenance and Aircraft Rework

The ship maintenance program increases as a result of adding two overhauls to the total and also due to the richer mix of overhauls scheduled. Nineteen additional availabilities for ships on extended operating cycles (EOC) or phased maintenance, are planned and we have used the lessons learned in the Falklands to improve survivability, safety and weapons. The backlog of ships overdue for overhaul will decline to two in FY 1985.

In aircraft material readiness, we expect an increase in the mission capable rate from 66 percent in FY 1983 to 70 percent in FY 1985. This means that 70% of the DON's aircraft will be able to perform at least one of their assigned missions. We also expect an increase in the percentage of aircraft able to perform all of their assigned missions.

Summary resources and program data associated with these maintenance programs are displayed in Chart 27.

CHART 27
DEPARTMENT OF THE NAVY
SHIP MAINTENANCE AND AIRCRAFT REWORK

SHIP MAINTENANCE AND MODERNIZATION
ACTIVE FORCES
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985
SHIP OVERHAULS	2,488.0	2,379.7	2,830.4
RA/TA	919.2	1,061.1	1,180.9
MODERNIZATION	895.1	1,045.1	1,480.1
IMA	298.1	330.6	364.5
TECH. SUPPORT	124.2	114.6	120.2
OUTFITTING	197.6	269.4	353.2
BERTHING & MESSING	38.6	33.9	43.3
INACTIVATIONS (SALT)	33.4	45.4	-
TOTAL: SHIP MAINT. & MODERNIZATION	4,994.2	5,279.8	6,372.6
NUMBER OF OVERHAULS	59	54	56
DEFERRED O/H'S	14	12	2

AIRCRAFT REWORK
ACTIVE FORCES
(IN MILLIONS OF DOLLARS)

	FY 1983	FY 1984	FY 1985
AIRFRAMES	265.3	339.0	454.5
ENGINES	182.3	206.6	344.2
COMPONENTS	846.0	1,149.2	740.8
MODS INSTALLATIONS	215.3	257.1	307.8
SUPPORT SERVICES	43.0	48.1	69.9
TOTAL: AIRCRAFT REWORK	1,551.9	2,000.0	1,917.2
MISSION CAPABLE RATE(%)	66	67	70

BIOGRAPHICAL SKETCH

REAR ADMIRAL DANIEL L. COOPER, U.S. NAVY

Daniel L. COOPER was born in East Liverpool, Ohio, the son of William B. and Rowena S. Cooper. He attended one year at Washington and Jefferson College in Washington, Pennsylvania prior to entering the U.S. Naval Academy, from which he graduated on June 7, 1957.

He initially served with the amphibious force on board USS CHILTON (APA 38). In June 1959, at the completion of Submarine School, he reported to USS TRIGGER (SS 564) in New London, Connecticut. TRIGGER's homeport shifted shortly thereafter to Charleston, South Carolina.

In 1963, Rear Admiral COOPER received an MPA degree from Harvard University through the Navy's Postgraduate Program in International Relations. During 1963 and 1964, he attended Nuclear Power School at Bainbridge, Maryland and then the S1C prototype in Windsor, Connecticut.

From December 1964 to March 1966, he served aboard USS HADDO (SSN 604), then he reported to USS SIMON BOLIVAR (SSBN 641) as Executive Officer on the blue crew.

In June 1968, he was ordered to duty in Washington, D.C. as Aide to the Vice Chief of Naval Operations. Following brief tours on USS HENRY L. STIMSON (SSBN 655) and USS QUEENFISH (SSN 651), Rear Admiral COOPER assumed command of the USS PUFFER (SSN 652) in January 1972.

He was relieved as Commanding Officer, USS PUFFER and reported in May 1974 to be Executive Assistant to the Assistant Secretary of the Navy (Financial Management). In May 1976, Rear Admiral COOPER was ordered as Commander, Submarine Squadron TEN in New London, Connecticut. In July 1979, he reported to Washington as Deputy to the Director, Strategic Submarine Division and TRIDENT Program Coordinator on the staff of the Chief of Naval Operations. It was while in this position that he was selected for promotion to flag rank. In August 1980, he became Deputy Commander/Comptroller, Naval Sea Systems Command. In April 1983, he was appointed by the President as the Director of Budget and Reports, Office of the Navy Comptroller, and Director, Fiscal Management Division, Office of the Chief of Naval Operations.

Rear Admiral COOPER is married to the former Betty Jane Ogilvie of East Liverpool, Ohio. They have two daughters, Amy and Cynthia.

NAVY AND MARINE CORPS POSTURE

Senator STEVENS. We will ask when the reporter gets here that we have her put an indication who is with you here today, Mr. Secretary, and I just ask now that one of your people give that to the reporter when the reporter arrives. We will have to wait until the reporter arrives for the questioning. So proceed.

Secretary LEHMAN. Thank you, Mr. Chairman. It is a pleasure to be here before your committee for the fourth time to outline to you the posture of the Navy and Marine Corps and to lay before you the President's request for 1985.

It is a particular pleasure because a great deal to be proud of has been accomplished in the naval rebuilding program during the last 3 years.

We would like to point out that the naval recovery buildup is now, and has been from the beginning, based on a solid strategy, an overall coherent, commonsense view of what the mission of the Navy and the Marine Corps are. That strategy is based on the national commitments that are provided to us by the Congress and the executive branch.

It is from those commitments and alliance dependencies that our program is derived. That is how we determine our force structure, the number of ships, aircraft carriers, airplanes, and Marine divisions, the level of readiness that we must maintain, the kind of people we must recruit, and retain, and the amounts and kinds of ammunition required.

There is a complete logical consistency to the Navy and Marine Corps program, and I think that the results that have been achieved demonstrate that it is well founded and based on a commonsense, bipartisan understanding of our national interest.

PERSONNEL ACCOMPLISHMENTS

The most exciting of all of the accomplishments that we point to is what has happened in personnel. This committee played a major role in starting that renaissance, that restoration of our personnel strength with the package of initiatives that was passed 4 years ago. The pay increases, the bonuses, the allowance packages, and the fair benefits package that were passed in 1980 have made it possible.

The results are unprecedented. Today, we have the finest force, by virtually every measure of quality, that we have ever had in the Navy and Marine Corps. Whereas just 3 years ago, we were manning our fleet at only 91 percent, today we are at 100 percent. But more important than that, the quality of that manning in the Navy and Marine Corps has never been higher, with or without a draft, in peace or in war.

For instance, last year, we finished with 92 percent high school graduates. We have virtually eliminated the incidence of drug abuse. Some statistics showed as high as 48 percent of our enlisted personnel had abused some kind of illegal substance 3 years ago. In the last year, we have not had any testing results that show even double digits in drug abuse. Many of the units now tested come out with indications of zero usage, which is a very proud accomplishment. We believe we are the most drug-free institution and drug abuse is well on the way to being eliminated.

Whereas we were at 22,000 petty officers short just a few years ago, our shortfall is now below 9,000, and we expect to eliminate that shortfall before the end of this 5-year plan.

600-SHIP NAVY

We are doing this even as we are growing the fleet. Today, the 600-ship Navy is very near to accomplishment. We have grown the fleet from 479 ships just 3 years ago to 525 by the end of this year. It will reach 545 by the end of next year and 600 by 1989. We have today the highest number of naval ships under construction since the Second World War.

Much of the program that we are presenting to you today, in fact nearly all of the 5-year program, has to do not with building to the 600-ship Navy, but with the maintenance and modernization of the 600-ship Navy that has been achieved. The new ships in the program, like the *Arleigh Burke* class destroyer, are not to build a larger Navy but to replace destroyers now in the Navy on a one-for-one basis.

So, our investment accounts are really focused beyond the achievement of the 600-ship Navy to the steady state maintenance of that Navy into the next century.

READINESS

Readiness, along with personnel, are our proudest accomplishment over the last 3 years. Never in the history of the Navy or Marine Corps have we seen such a dramatic improvement in readiness, by virtually every measure. Ships have gone from nearly 25 percent reporting C–1 and C–2, which is fully combat ready, to 49 percent. In other words, even as we have grown the fleet, we have doubled the percentage of ships reporting C–1 or C–2.

Increases in aircraft readiness have been equally dramatic. Even as we have increased the number of aircraft squadrons, we have dramatically increased their readiness by about 30 percent. As measured by virtually every statistic, personnel training, equipment capability, spare parts, the sheer commonsense basis of how many airplanes in a squadron are ready to fly at any given time, and how many of the aircrews are fully up to speed and trained, we have a tremendous ready fleet today. It is more ready, in our judgment, than it has ever been in peacetime.

Today, we have the ability to deploy simultaneously, as we did last year, eight of our aircraft carriers. Whereas 3 years ago, we could only deploy five with the full 90-day supply of spare parts. Of course, in wartime, we could generate all of our carriers with a lesser than 90-day supply of parts. The change has been dramatic. We will achieve the full objectives for spare parts and ammunition by 1989.

PERCENTAGE GROWTH

You mentioned, Mr. Chairman, the percentage growth. I would like to address that. The accomplishments that we are so proud of in the last 3 years have been made possibly by sustained growth for the Department of the Navy that has averaged around 5 percent over this 3-year period. Last year, however, we had a difficult time. The Department of the Navy ended up with minus 6-percent growth when the final appropriation came in. We hope to get back on the positive side of the ledger this year. We believe that by continuing the sustained growth that the President has asked for, the sum of the output will continue to be a great deal more than the percentage increase in resources allocated.

We have been able to accomplish what has been accomplished in this short period of time with between a 5- and 6-percent real growth, primarily because of the major accomplishments in management reform that have taken place under the leadership of Secretary Weinberger. It is most unfortunate that bad news seems to be the only thing that is treated as news in the media.

There has been so much good news that has gone unreported that it has left a very distorted view in the public's mind about what is really going on in defense.

It would seem to me that some of the dramatic news would be the fact that for the second straight year, we have delivered our ships a net 22 months ahead of schedule and under budget.

As this committee well knows, for the last 2 years, sound management has resulted in the delivery of ships and aircraft below the budget, enabling this committee to make real savings in the course of the legislative process.

AIRCRAFT PROGRAMS

Our aircraft programs for the first time in history are all firm, fixed price, precluding the possibility of cost overruns. This last year, we brought in our contracts, all of them, a net average of 9 percent below the budget on firm, fixed price. This is tremendous progress in reforming the procurement and development management procedures of the Department of the Navy, thanks to the leadership of the Secretary of Defense, Secretary Weinberger. Much credit should be given there.

The accomplishments are seen as well in far less dramatic areas such as spare parts procurement and management of our development programs. We are getting much more output for the money. The emphasis on competition has been tremendous.

SHIPBUILDING PROGRAM

Of our shipbuilding program, for instance, has gone from only 27-percent competitive just 3 years ago to 94-percent competitive in the current year. So we are making tremendous advances in bringing down the cost of doing business in defense and as a result we are still on course. As I am sure you will note today, I have not nor have the CNO or the commandant changed one note of the presentation and the goals that we set before you 3 years ago. We are still on course because we have managed the program well and have been able to bring in a great many savings. Those savings have enabled us to keep the number of ships high, the amount of spare parts high and the overall level of procurement on course to achieve the ready 600-ship Navy and Marine Corps by 1989. Thank you, Mr. Chairman.

Senator **Stevens**. Thank you, Mr. Secretary. Do you have a statement to make, Admiral?

Admiral **Watkins**. Yes, Mr. Chairman, I would like to make a short oral statement.

NAVAL STRATEGY

My posture statement, Mr. Chairman, contains about 25 pages discussing the challenge our Nation faces today and how our national security policy and our closely coupled maritime strategy deal with that challenge. It is important to explain this linkage because there are those who suggest that we have neither a strategy nor a budget related to requirements, and I think this simply is not the case.

Our strategy is developed in response to world events; we test the strategy in war games, in exercises in real-world operations such as Grenada, Lebanon, and Strait of Hormuz, and then we feed results back not only into our strategy, but also into annual development of our budget and 5-year defense plan. Based on analysis of that feedback, we make the most effective possible allocation of resources among our four pillars of readiness, sustainability, modernization, and force structure.

This year's budget is the most cohesive we have presented to you. Our heavy commitments around the world bring a sense of urgency to our requirements primarily in readiness and sustainability. Our research and development budget is being restored to a prudent level of funding as a percentage of our total budget. High payoff projects are replacing low payoff ones.

In a world where we face a 3-to-1 disadvantage quantitatively, we rely on technological advantage to achieve qualitative superiority. This national treasure of technology must be protected. It is now far too easy for the Soviet Union merely to help itself to the fruits of our labors.

READINESS AND SUSTAINABILITY

You will find that almost 60 percent of our budget is devoted to readiness and sustainability—that is a growth from last year—while only 22 percent is devoted to force structure improvements. Thus, I have difficulty with the notion that we have, as indicated in the morning paper, "a bright, shiny force tied at the docks with modern equipment that won't work." Every readiness index is up, as the Secretary has said, and has been the case for several years now. Personnel readiness and quality of the force are as high as I have ever seen in 35 years.

RESERVE COMPONENT

Our Reserve component is shouldering a greater share of our commitment and to enable it to do so, it is being provided high-quality equipment. No longer our poor cousins, the Naval Reserve today is an integral part of our overall efforts. Our spare parts and ordnance bins are filling up. We are introducing good ships, good aircraft, and good weapons systems on time.

The much-discussed Aegis weapons system is performing in its first fleet introduction at a level equal to or superior to its predecessor after a decade of operational experience and technical improvement, and in a far more demanding test and operational environment than has ever been presented.

As a result of those improvements, we are now moving out of the gray zone of uncertainty which my predecessor described to this committee several years ago, and this budget strikes an optimum balance among our four pillars through an affordable program.

With your support, it can result in maritime adequacy by the end of the decade.

MANAGEMENT INITIATIVES

The Secretary of the Navy and I have seriously taken on proper application of resources to the Nation's defense. We have initiated a series of management initiatives which are detailed in the statements.

Our own oversight and auditing offices have ferreted out waste and abuse, and I would like to emphasize that the personal leadership and hardnosed business approach taken by the Secretary of the Navy in contract negotiations has resulted in the most dramatic reduction in costs I have witnessed in my years in the Pentagon. Unlike defense pundits who write eloquent acquisition directives and magazine articles, but cut forces and readiness, he saved billions through tough business negotiations and competition and the word is out in the Navy: "Manage efficiently. The old ways of doing business are no longer acceptable to us."

I think our results reflect these changes. Thank you, Mr. Chairman.

Senator STEVENS. Thank you, Admiral Watkins. General Kelley, do you have any comments?

STATE OF MARINE CORPS

General KELLEY. Sir, I have submitted a statement for the record. I just merely want to comment, Mr. Chairman, that despite the fact, as you mentioned, our budget represents a frugal 4.1-percent real growth, that the state of the corps has never been higher. Thank you, sir.

Senator STEVENS. Thank you very much. Now we have a slight problem. I think maybe we ought to adopt the procedure that is used in Alaska, Mr. Secretary, Admiral, General. In Alaska, we use electronic records and we reproduce them only at the court's desire to have them reproduced, and they are never late. We don't have any problem turning on our recording devices. Frequently lately, I have noticed we have had late reporters. We either are going to have to change systems or change reporters. We do have a tape recording of this hearing, the staff informs me. I think we ought to just proceed. If there is any dispute later over what we said, John, we will have to get together and make sure we agree on what we just said. We will ask you not to erase the tape, Mr. Secretary.

READINESS

Let me first just comment to you that some of the things you didn't read I hope that everyone will read, the whole concept of readiness as set forth in your statement. There is no question about it. As you indicated, 3 years ago, only 5 of our 12 aircraft carriers could be deployed with a needed supply of spare parts. In the last year, we have 8 of the 15 spontaneously deployed with required spare parts aboard.

SHIPBUILDING PROGRAM

I also particularly like that part of your statement where you indicated you have raised the percentage of competition in our shipbuilding programs from 26.3 percent in 1981 to 86.4 percent in 1984. This committee, in particular, has been quite interested in that, and we congratulate you on your success in that regard.

You also pointed out in your statement in calendar year 1982, 25 ships were delivered to the Navy, of which 12 were on time, 7 were for a total of 11 months ahead of schedule, and 19 were either on or below budget. In 1983, 21 ships, of which 12 were on time, 8 were for total of 22 months ahead of schedule and 13 were either on or below budget. In 1984, 19 of your ships will be awarded competitively and only three sole source. That is certainly going in the direction that many of us have been talking about for years, and I for one congratulate you on certain percentage and as a whole congratulate you for the success, Mr. Secretary, that you and Admiral Watkins have brought about.

We will institute a 5-minute rule for the first time around at least so that we can all get to some comments or questions we want to make.

REAL GROWTH SPENDING REDUCTION

We have a difficult time this year, there is no question about it. Last year, the Navy did suffer as a result of the reductions that were made and the manner in which they were made. We want to try to be more freer this year, try to insure the process of reducing the budget is more fair and at the risk of being misquoted again, I had said once before during the year that I anticipate we will be directed by the Senate to reduce the level of spending to a 5-percent real growth, not that this committee will support that, in fact I intend to support a level of somewhat around 10.5 percent going in. I would anticipate that would be about the level we will try and hold. It will be a direction that the final result of the conference should be around 5-percent real growth. That means, however, that in order to get there, we have to have some priorities. We are not asking you to give us the priorities now, but do you think that there would be the ability this year to coordinate our efforts a little bit more closely, Mr. Secretary, and Admiral Watkins, than we did last year? It doesn't seem there is an inevitably in this reduction process this year that I don't think people recognized last year.

Secretary LEHMAN. Mr. Chairman, without agreeing that there is inevitability to cuts, I would say that we believe we have learned a good deal and have established a very solid working relationship with this committee. We expect to have a very extensive and continuing dialog with you as the legislative process goes on throughout the year. If there is a sudden awakening in Congress to our point of view that, in fact, maybe Congress ought to add some rather than subtract some, we will work just as hard to show where you can add and save money.

MAINTAINING READINESS DURING BUDGET CUTS

Senator STEVENS. In my judgment, the comments made in the papers in the news media about readiness, as I indicated to you personally, on the one hand, they look like an attack. On the other hand, they are attacking people who say we can reduce readiness in this budget.

Do you think we can comply with these budget directives without reducing our readiness? In other words, is it possible to tilt the cuts so that readiness will be assured and at the same time comply with these budget directives we think are going to be coming at us?

Secretary LEHMAN. Mr. Chairman, that is a very good question, and I think you ought to keep in mind what the term "readiness" really means. The term "readiness", if it means anything, means being ready to perform the missions that the country expects us to. If the Straits of Hormuz are closed, or if there is a crisis in Central America, or a potential attack on Western Europe, are we ready to meet the threat. Thus, readiness can be defined as a composite picture. Do we have enough tanks, or enough ammunition, or enough spare parts? You can be just as unready and you can lose a war by running out of airplanes or tanks as well as ammunition or spare parts.

What we have presented is derived from a very detailed process based primarily on the people in the field and what we have is a balanced program to be ready.

Obviously, less money means we are going to be less ready. We either have fewer airplanes, fewer ships, fewer spares, or less training. If there have to be reductions, they can obviously be taken in a way that causes the least damage to readiness, but there is no way cuts cannot hurt readiness.

Senator STEVENS. Thank you very much. I am going to try to observe this 5-minute rule. We just finished a meeting this morning with our good friend, Mr. Cole. I noted one question Mr. Cole involved a 10-minute answer. I hope that will not prevail. Senator Stennis.

NAVY MILITARY/CIVILIAN PERSONNEL

Senator STENNIS. Mr. Chairman, I want to commend the fine working relationship between the civilian Navy and the military Navy. I think we have as fine a combination as you can get, and one of the best that I have known in the system.

Senator STEVENS. General, that is a high compliment because he has known a lot of them.

Secretary LEHMAN. Thank you, Mr. Chairman.

Senator STENNIS. I mean it. I went down to Puerto Rico. I had not traveled among the military in a good while. Well, that was during the recess. I got down there and got to walking around—

never did stop. Put in 5 full days and worked some at night. So very pleased that I had been down there on a little trip, the first time I had taken the time, so pleased, indeed. What I saw there—not just Puerto Rico Island--the area for training the Army, an amazing thing we have there. Proud of it, every bit of it. It cost a lot of money, and it is worth it, and I will get back to the money in a minute.

STATUS OF MILITARY IN PUERTO RICO

But every member of this committee that can, I suggest you go down there and look it over; training on the ships, training in the air, training under the sea, training everywhere. Part is due to an amazing commanding officer you have down there, Hernandez I believe is his name. He is a native Puerto Rican. He wasn't trying to charm me, but he did for about an hour. Great talker.

I feel a lot better about things. I already knew about the activities up here, but, however, our country is in trouble, gentlemen. No one is about to attack the Navy, but we have already been successfully attacked, as I see it, in our money affairs, and we are going deeper and deeper.

I wonder what showing you could make if we just asked you where you have saved some money, Mr. Secretary—I am looking right at you. You do things you set out to do, and you are mighty good at it. We must adopt a better attitude and habit throughout the entire Government. I am not pointing at the Navy. I think you do as good a job for accounting for the dollars as any, and you are way behind, too.

We have got 100 Senators, and I think everyone of them are willing to point out where the deficiencies are in our finances, but there are not many of us who are willing to step out to take a stand, and that is what has got to be done. We can't lament any more, as I see it. We don't need to count the dollars any more; they all point the same way, $200 billion deficit in a 12-month period, $305 billion for military alone. I remember just 20 short years ago when we ran the whole Government for less than $100 billion. Something is out of tune. Something has got to be done. I think the further we go, the more adjustments we are going to make, the more it will hurt, including all of the military, and I am promilitary.

We can write these things; we admit the situation, but we don't do anything about it. Someone said: "Well, it's an election year." I know that is part of our system. I think the military employees, civilians and all in the Government could well take this money situation quite seriously and volunteer to help out. We are not getting enough results.

Maybe I take these things too seriously, but I don't think so. I have seen a lot of ups and downs in the economy in my time and finally someone has to knuckle down, provide the leadership, and do without to make ends meet, otherwise we will destroy our system.

I am not trying to give a lecture, but I am disappointed.

I want to commend you especially for this problem you have tackled. It was bad, I know. Personally, I think that is one of the more serious conditions we have to cope with, especially with our young people. Nothing can be more devastating than that. I hope you keep that up.

Mr. Chairman, I know I have used my time. I feel a little better myself for having said these things again, but if we are going to continue a strong Navy, and we have got to have it, we have got to make our dollars go further. That is all, Mr. Chairman.

Senator **STEVENS**. Thank you very much, Senator Stennis. I know the Navy is going to listen to you very closely, as they always have. Senator Rudman.

READINESS

Senator **RUDMAN**. Thank you very much. Mr. Chairman. Mr. Secretary, Admiral Watkins, General Kelley, I would address this to each of you. The reports that you referred to in your statements regarding readiness raise an interesting point. It is not as near a concrete analysis as it is an analytical function. It depends entirely on what kind of data those analysts put into their computers to come up with theoretical readiness numbers, and, obviously, reading in between the lines of what we have read in the public press, they are basing that data on some information prepared by analysts on a particular scenario that may or may not be valid.

It is my view, after looking at both sides of the issue, that the criteria were set in a way as to make readiness under that scenario appear to be less than required. I think the public record could stand a bit of illumination on that subject. The American people ought to know that in terms of what your requirements are, in terms of what you might be called upon to do, that you have a level of readiness that far exceeds what one might glean from reading those reports.

I wonder if you all might want to comment on that in terms of your mandated responsibilities.

Secretary **LEHAMN**. I agree with you wholeheartedly, Senator. I think the press is doing a great disservice to the American people. The people have a right to know what is happening after the 3 years of increased expenditures, and a very distorted, unrepresentative picture is being provided by the manipulation of data that you are talking about.

The real question the American people need to ask is, are the military forces that they are paying for increasing or not in their ability to do their job. I defy anyone to go to any military unit—certainly any military unit in the Navy and Marine Corps—and find anyone who believes that there has been a decline or who believes that that particular unit has not increased dramatically in its abilities. That is true by virtually every common sense measure. We have more and better people, more ammunition, more spare parts, more steaming time, and move flying hours.

The force is more ready and that is what the American people need to know.

Senator **RUDMAN**. Admiral Watkins.

Admiral **WATKINS**. Senator, I can only add this to what the Secretary has said. Years ago, we were chastised by the Congress, and properly so, for not being able to find an analytical system, as you mentioned, that reflected the results of investment of resources. We have worked very hard for years to correct our system so that when we add resources given us by the Congress, we can present it to you in statistical fashion, such as we use daily as managers of the Navy and the Marine Corps to monitor the forces in the field.

We think our readiness monitoring system today is a good system, as good as you can make a quantitative system apply to judgment calls.

Every one of the indices that we have, whether it is backlog of ships awaiting overhaul, whether it is the airframe extension that we have now rejected as not being a not very useful tool, whether it is mission capability, full-mission capability, whether it is personnel readiness, the number of experienced petty officers onboard, and in selected skill areas; whatever it is, all those indices are coming up and coming up very markedly and are directly attributable to the support we have been given by the Congress.

We are refining our procedures now so that within the next year or so, we are going to be able to be really specific—be able to say a dollar is worth this kind of readiness in a whole range of selected areas. It is not only judgmental, but it is also analytical. The trouble is that there are people around who select an index from inside a system which is not very familiar to them. They see, for example, in the morning paper that some kind of readiness indicator in the Navy went from 86 to 83 without having any idea what it means. That happens to reflect PMR, which is the proficiency of the aircrews based on the number of flying hours they have. Instead of having 25 flying hours per aircrew per month, it might be 24. That is subsumed in our other indices in our analytical base.

So perhaps in the training readiness of our squadron, which is on the increase, very positively, we might have had some curvature in the slope of that line had we had 25 instead of 24. So really it is taken out or perspective in that context, and too often those who don't know what we are talking about in terms of our C ratings and the kinds of things we use them for, use it for their own purposes.

For example, you can select C-3 and C-4 numbers and in any 1 year—because of a change in the data base of a service—you can see it go down, and we are unfairly criticized for it since the C ratings are just management tools.

CARRIER BATTLE CRUISE READINESS

Senator RUDMAN. On that particular point, if we were to take a hypothetical case to measure the readiness of a carrier battle cruise, and we were to draw a situation where that battle group had to be engaged for *x* amount of time, say, 90 days, at a high level of engagement, you would not tell us you were ready at this time, but that would imply that you really were not ready. That, however, is hardly the scenario that any of us would assume might happen.

If we talked about 18 or 20 days, then you might say we were ready, except we are still building up our air-to-air missiles, for instance. Isn't that the kind of numbers game people are playing? I think it really distorts what we are talking about in terms of readiness?

Admiral **Watkins**. You have——

Senator **Rudman** [interposing]. Isn't that really the point?

Admiral **Watkins**. Yes, sir, it is, Senator Rudman. You know, years ago we had a strategy that was focused on a very short war in Central Europe swinging all forces from the Pacific theater, for example, and we felt that was a tragic national policy. When we set those policies, they affect the numbers of bullets in the bins, the buy of threat-oriented weapons, the number of people, and so forth, and we put ourselves in such a posture that when we changed the national strategy to one of global strategy, one not centrally in Europe, one that is sequential all across the globe, all of a sudden there are base changes, and relative to that base, you are not as ready as you were yesterday, because of the administrative changes.

When that is taken out of context, then the services are heavily criticized when, in fact, we should be applauded. The Congress is applauded for the application of those resources for war-fighting capability which is clearly about 30 percent higher than it was 4 years ago.

Senator **Rudman**. Mr. Chairman, I think that is a very important explanation for the record. When you read the public press and the analytical base that those objections are made on, they also give a distorted view. I know my time is up. If I could, Mr. Chairman, ask General Kelley to comment for the corps on that one point.

Senator **Stevens**. Certainly.

MARINE CORPS READINESS

General **Kelley**. Thank you, Senator Rudman. Whenever you talk about readiness, I am always reminded of the time I commanded an infantry battalion in combat in Vietnam, and we were right on the borderline between C-3 and C-4, and were committed to a very hot-landing zone. As the casualties were removed, I realized we had gone to C-4, which means that, in personnel, you are not combat ready. I was loath to tell my marines the truth—they were no longer combat ready—because they were doing such a damned fine job.

Readiness is always in the eyes of the beholder. Now, I have just returned, Senator Rudman, from 1 weeklong trip to the west coast where I visited every major installation. I must tell you, in terms of people, as has been stated by the Secretary and Chief of Naval Operations, they have never looked better. As for sustainability, the bins are as full as I have ever seen them in our supply depots. In training, we have more realistic training, including more training ammunition, to do the things we need to do to give us the kind of combat training that is required. Quality of life has never been higher. That, to me, is certainly one of the major factors that contributes to the mental and moral readiness of our individual marines.

So by any standard that you want to measure, including the readiness standards that we use, the readiness of the Marine Corps is the highest that I have ever seen in my 33 years.

Senator RUDMAN. Thank you.

Senator STEVENS. Senator Johnston.

NAVAL SHELLING OFF LEBANON

Senator JOHNSTON. Thank you, Mr. Chairman. Mr. Secretary, or Admiral Watkins, the *New Jersey*, of course, is off Lebanon now and has been lobbing some of the shells over there. We have been able to use the World War II stores of those shells. The report I get is that they are not of uniform quality and, consequently, the targeting of the shells is way off base. Somebody said it is short of guesswork where they are going to land. Would you comment on that?

Secretary LEHMAN. Yes, Senator. That is not an accurate report. There are different lots of that ammunition, and by adding all of the different lots, we have a total of about 40,000 rounds for those battleships. Of those, about 18,000 are considered to be totally reliable. Others are going to need rework, or refurbishing, and recertification. There is always a certain amount of anomaly in the kinds of powder that you use, and that is factored in when you do your targeting analysis. But there has been no evidence that there has been defective ammunition leading to inaccuracy in the firing.

Senator JOHNSTON. How accurate have the shells been, or is that classified?

Admiral WATKINS. Senator, I think it would be very inportant that I try to put in context what the *New Jersey's* mission is, how it relates to bomb-damage assessment and the like because I think it is not well understood what the mission was, what our goals were with the *New Jersey*, and so that bears very directly on this whole concept of bomb damage, sir.

The mission, as set by the President, was to take under fire those artillery units up in the Syrian-backed territory if, in fact, they would bring artillery shells down on Beirut, trying to interrupt the attempted reconciliation, the forming of a reconciliation government.

On February 8, for example, the day *New Jersey* put 290 rounds up on the ridge, over 5,000 artillery rounds from Syrian-backed forces had come down on Beirut indiscriminately killing a number of people. The mission of the Navy gunfire support of airstrikes was to silence the batteries. The batteries on this occasion were silenced for 10 days. Whether they pushed mud or killed a few goats, or whatever, as is coming through the electronic media, they did the job.

We also know this from human intelligence and, by the way, we can't see many of these rounds at 12 to 17 miles away with heavy cloud cover and the like, so it is difficult to get the assessments——

Senator JOHNSTON [interposing]. I thought we had a hilltop observation post up there?

Admiral WATKINS. That is something new, Senator, and I will touch on that in a minute.

We did not have during those firings, nor were we intending to have any forward spotters for that purpose because the idea is, when one of our missions goes over to take photoreconnaissance, if the plane is fired at, then rounds are put up on the ridge at artillery positions that are in the vicinity, because many of these rounds are fired from tops of buildings, nurseries, and markets and collateral damage is not authorized in our rules of engagement. We try to minimize any kind of damage to the civilian population.

When we fired upon the ridge, we fired at a coordinate given to us by the commander ashore who says: "Please send your rounds to the following coordinates." Those are verified on the ship. They are in the vicinity of the artillery positions and they put the rounds right in those coordinates. And where we have bomb-damage assessments from aerial photography, which we had on only about 20 percent of the rounds because of the weather, we found the pock marks of the 16-inch rounds completely obliterating the coordinates.

So, in general, the accuracy of the shells is about something less than 1 percent in error of the range. So let's say a 200-yard error might be expected at 10 miles, something like that, but when they fire for effect, the entire anomalies of those disparate shots completely eliminate the area.

So we have proof positive in the case of those shells, that they go where they are expected to go. In the case of the 5-inch rounds, we fired 5-inch rounds just a few weeks ago up on the ridge. We had a spotter in this case because now the marines were moving out. We were so concerned about the remaining Americans in there not having ground-support forces that we put spotters forward in a variety of areas to see where those rounds were going because we don't want to kill innocent civilians. Those rounds landed on a ZSU-23, a rocket launcher, a 122-millimeter battery, and an observation post and destroyed them. It silenced and gave the Syrian-backed forces less interest to continue the engagement.

Before last fall, when the 5-inch rounds went up on the ridge, we hit tanks because there were forward spotters there, because we were very concerned about the Syrian-backed forces taking the ridge and putting our marines in jeopardy. They chased the tanks out, destroyed tanks, and forces, and walked those forces back at 200-yard intervals in accordance with the precise procedures that we follow in naval gunfire support.

Senator JOHNSTON. I would say that is an adequate answer.

Admiral WATKINS. I take exception to those who say we can't hit anything. We can hit anything we can aim at, sir.

Senator JOHNSTON. You just convinced me. General Kelley, the JVX program is proceeding now as a naval program. It has an IOC, I think, of 1991.

General KELLEY. 1991 is correct, Senator.

JVX

Senator JOHNSTON. I understand that there are some 13 different missions that different parts of the Department of Defense have played with respect to the JVX. I am concerned, as a supporter of JVX, we might try to make it do too many things, and thereby delay it and thereby make it one of these heavy aircraft that won't perform its mission. Would you comment on that, please?

General **Kelley**. Senator Johnston, you are absolutely correct in that concern. I think one of the benefits occuring from the department of the Navy now having total responsibility for development of JVX is emphasis on one primary mission for this aircraft. I think when we had a triservice-funded core program, we did have a very strong potential of having a three-hump camel. In this particular regard, now that the Navy and Marine Corps have been given the responsibility we no longer have that possibility. We will consider all of the other service requirements, but the other services are in total agreement that this will be designed to be flown as a Marine Corps aircraft with that mission in mind, primarily, of course, with the Navy missions and the others, while secondary, reserving full consideration during the design phases.

REDUCTION OF DEFENSE BUDGET

Senator **Johnston**. Very good. One final comment. I share Senator Stennis' concern about the size of the deficit, and I think there will be a definite move on the part of the Congress to reduce defense spending. In the process, though, I hope we don't waste money, and I know you will give us guidance, Mr. Secretary, on where not to waste money by trying to save money, particularly in some of these procurement rates where you go down below a certain level and you end up with unit costs so much greater than it really is not a savings at all.

Would you comment on that?

Secretary **Lehman**. I will very definitely, Senator. I believe that it cuts both ways. There are some very unproductive cuts that do much more damage than others. For instance, last year, we estimate that the elimination of certain multiyear procurement front funding that we requested cost the taxpayer, that is, the Congress cost the taxpayer about $800 million over the total lifetimes of those programs. That was false economy.

However, I can also show you and would obviously be more enthusiastic to do so, how we can bring the unit cost down dramatically with just a little increment of funding above what the current projected levels.

For instance, in some of our helicopters, like the SH–60, we can show substantial unit-cost reductions by increasing the procurement level over the 18 that are in the current budget. There are many other instances, but the point is, we are costing the taxpayer money because of cuts made in the past by reducing production rates and not permitting competition.

Senator **Johnston**. Thank you, Mr. Chairman.

Senator **Stevens**. Thank you very much. Senator Cochran.

AEGIS COMBAT SYSTEM

Senator **Cochran**. Thank you, Mr. Chairman. Admiral Watkins mentioned in his testimony that the Aegis combat system was performing quite well. I wonder, in connection with the Aegis system, whether or not it is performing well with respect to cost estimates and schedules and the requirements of the Navy generally?

Admiral **Watkins**. Yes, it is, Senator Cochran, in every way, except in the area of missile performance on very low altitude supersonic inbound missiles, which is a technical issue we are solving and with the SM-2 block 2 missile, which is being funded by the Congress. That problem will be solved before the Soviet Union has any real capability out there to field something against us.

There are too many around town, again, plucking out indices of highly classified operational evaluations who don't know what they are talkng about. What is happening is, they are going to throw out the baby with the bath water with their thinking by taking the finest, most sophisticated weapons systems to deal with the threats in the 1990's and past the year 2000 because of one element at the very maximum edge of the envelope which is a real technical issue.

It is as difficult as Stealth itself to deal with. On the other hand, we have solved the problem and in a follow-on missile, we will demonstrate we can handle the supersonics.

I think that is the issue, and I think in all the other elements of the normal operational evaluation performance of that system, we look for the deficiencies. What is never, again, put in the report is the incredible positives that have come out of that same evaluation and operation report rather than focusing on one edge of the envelope.

I really feel we have not only fielded one of the finest weapons systems the Navy has ever seen to face the threat of the future, but we have demonstrated it in a real-world environment in the Eastern Mediterranean. We can see things we have never seen before. We can keep our deck-launch interceptors on the deck of the carriers because we are confident in our ability to reach out hundreds of miles and pick out insects, if you will, and track them in our computer system.

So we feel very comfortable about the system. Because of all the brouhaha, we are going to go ahead and accelerate some testing and demonstrate other anomalies other than missile malperformance which have, in fact, been eliminated from the system, and we will invite all comers to have a proper observation.

Senator **Cochran**. Mr. Secretary.

SHIP PROCUREMENT PROGRAM

Secretary **Lehman**. If I might comment on the business side of that ship procurement program, I think there are many lessons to be gained. This committee, in particular, deserves credit for bearing with the Navy and supporting us in our attempts to get competition into the program because it has been an enormous success. Both contractors involved, particularly Litton who was the original lead-ship contractor, deserves much credit for the way they have responded to competition. These ships are coming in ahead of schedule and under cost. We signed the 1983 contract with Litton for three ships, a net $120 million under the budget on fixed price, 50-50 share-line contracts. We have awarded the leader/follower contracts on 1984 ships that were just voted last December. Litton won two and Bath Iron Works won one. We came in more than $100 million under an already reduced budget.

So it is a very successful, well-managed program for which both contractors deserve a great deal of credit.

Senator COCHRAN. Are there plans to award the contracts under this budget for 1985 in the same competitive way?

Secretary LEHMAN. We are going to do it exactly the same from now on. Contracts will be competitively awarded, the winner will build two and the loser one. all of the subsequent years of procurement of this ship will be leader-follower competitive, which is by far the best way to go.

Senator COCHRAN. And the question for three additional ships——

Secretary LEHMAN [interposing]. We show three a year until the final year of the program when it drops to two, but we may want three then as well. Three a year is the ideal competitive situation for those two yards. Of course, we would rather have four. We could then award three and one, but two and one gives us the competition we need.

DDG "ARLEIGH BURKE" CLASS DESTROYER

Senator COCHRAN. What about the request in the budget for the new DDG *Arleigh Burke* class destroyer? I saw a report from CBO, or somewhere, critizing that budget request. Is that a critical need?

Secretary LEHMAN. Yes, indeed, Senator. It is a very critical need. I want to repeat what I said in my opening statement. The *Arleigh Burke* class destroyer is a replacement destroyer on a one-for-one basis, for the existing destroyers that will reach their 30-year life during the time of this production schedule. It is designed to be a midrange, midcapability ship that is about midway between the FG-7 class frigate and CG-47 Aegis cruiser in cost and in overall capability.

It is going to be a fine ship and quite affordable. It has got a fixed, firm ceiling of $700 million per ship for the follow-on ships after the sixth.

"IOWA" CLASS BATTLESHIP

Senator COCHRAN. What is the status of our *Iowa* class battleship reactivation program, and do you continue to push for the request of the funding of the third *Iowa* class battleship?

Secretary LEHMAN. Yes, we believe that the battleships are very cost-effective, having real deterrent capability in a wide range of warfare areas. The performance has been superb. For example, the *New Jersey* is 9 months into a 2½ month shakedown cruise and she has never once dropped below C-2 for readiness. She is the most ready ship we have ever had deployed. It is a tribute to the way we used to build ships 40 years ago, the standards of materiel and so forth, and to the men that man and keep her ready today.

I also want to commend. And I think this committee should take note of the superb performance of Litton on *Iowa*. The response to the Navy's request to see if we could speed up *Iowa* because of the stress on families and on the sailors out there on *New Jersey* for 9 straight months, and it looks like it will extend now to a full year, has been superb. They have really turned to. They have gone to two and three shifts and have accelerated the schedule nearly 6 months from the initial schedule. We are now looking at a delivery of about April 15 with the commissioning on April 28. She should be able to relieve *New Jersey* on station in early July.

Senator **Cochran**. Thank you very much, Mr. Chairman.

Senator **Stevens**. Senator Andrews.

WARRANTIES

Senator **Andrews**. Thank you, Mr. Chairman. Mr. Secretary, it is good to have you here, along with your backup. One of the questions I have had has to do with a piece of legislation the subcommittee put into law last year. You are looking at it, I am sure you had your people explore the possibility of warranties. How are they serving the Navy, the requirement that mandates warranties? Is that giving you the opportunity to get more defendable weapons systems; is it cost effective?

Secretary **Lehman**. Senator, when the initial legislation was passed, it gave us all a good deal of concern because of the initial reading of some alarmists over what its impact would be.

Senator **Andrews**. That happens in any case of systemic reform, and this is certainly an example of that.

Secretary **Lehman**. I think you also have to understand the human side of it. In the Defense Department we kind of felt that we had taken the lead on being tough on the contractors and getting tough warranties and performance. We felt that that legislation tended to be seen as a criticism for the efforts that we were undertaking.

However, having had more time to study the law and ascertain the intent of Congress in the law, I would say that the net effect of your legislation has been quite positive on the Department of the Navy's ability to deal with our contractors to get the kind of strict, tough performance in contracting that the taxpayers deserve.

So, while I think there is time for considerably more dialog on perhaps adjusting terms of the legislation, which the Department of Defense, I am sure, will be discussing with the committee, overall, I believe that the legislation has had a positive effect.

HARRIER PROCUREMENT

Senator **Andrews**. Have you sensed any specific savings or opportunities for savings in procurement of such weapons systems as the Harrier, for instance?

Secretary **Lehman**. Yes, that is a good example. In the Harrier program we, in fact, were able to get a reduction in price because of what we believed was a clear contractually implied warrantee for specifications in the contract that had not been met.

Senator **Andrews**. In other words, you went to the contractor and said Congress has now put into law requirements requiring the warrantee and that helped you get that specific warranty from the contractor?

Secretary **Lehman**. I would say very definitely. The fact that Congress has taken action and shown this visible concern has strengthened our hand at the contract bargaining table in getting more extensive warranty provisions into the contracts than we are currently and have been negotiating since the legislation.

Another aspect which was one of the causes of the Department of Defense concern from the beginning, is I think, falling into better perspective. We were concerned when the legislation was first put forward that this could well have an effect opposite to the desired effect in that there is a common law, implied warranty in contractual dealings. In the Navy Department we have been enforcing this implied warranty.

For instance, if a contractor is paid to develop a wing strut and the wing strut turns out to be faultily engineered, there is an implied warranty that he must fix it, not the taxpayers, because he was paid to do it right the first time.

Now it gets complicated, if, in fact, Government provided the design specs. But, by and large, it is quite possible to sort out which is which. At first, we feared the legislation would undercut that. In other words, if you don't have it in writing, you don't have an enforcible warranty. We now believe that the legislation does not have that effect. In fact, it can strengthen, if we interpret it properly, the implied warranties we have under common law.

Senator ANDREWS. You recognize, of course the intent of the Congress was not to get warranties on R&D. You have to find out how a particular plane or how a weapon is going to work, then when you go into production contracting, you write the warranty and if you come to us as Members of Congress and get a warranty on naval aircraft for only 400 miles an hour and actually the thing is expected to fly 550, you can negotiate that warranty wherever you want. You are going to have a tough time justifying to this committee why you are spending several millions of dollars buying a plane that will only fly 400-miles an hour. But the point is you have control over the warranty up front. We have the opportunity to question whether that type of weapon delivering that kind of warranty is really what we want to be spending the taxpayer's money on, but it places responsibility in both of our hands and should give us the opportunity to control and get better performance out of production-line weapons development. "Manufacture" is a better word.

Secretary LEHMAN. I think we are on the right track and continued dialog with the Defense Department and the committee will certainly end up strengthening the hand of the Government.

Senator ANDREWS. And the last sentence of Admiral Watkins, in his reference to warranties: "We applaud the increased emphasis on warranties, and we will continue to use them," you are making progress and realizing it can be a tool toward more effective weapons procurement and less net cost to the taxpayer?

Admiral WATKINS. Yes, sir, that is the case, Senator Andrews. I think the difference in our concern is evident in my posture statement given before the organization committees 1 month ago and how it has been transformed in the interim period after negotiations and discussions, that we feel comfortable with at least our interpretation, which we would hope would also be the congressional interpretation, and we think we can even put additional emphasis on warranties.

We have been in the selective warranty business by law since 1962. Prior to that time, we had wide-open warranties in the Navy, and the GAO in 1962 found them to be unproductive, they were too proliferated, we weren't showing a saving from it and it was too costly.

So we look back at that track record and that history and we are a little bit concerned we might be walking back into the swamp of an uncontrolled warranty, and that, I know, is not the intent of the legislation. So we feel, I think, comfortable now, that we can get on with a more aggressive warranty program.

WARRANTY CONTROL

Senator **Andrews**. The control of warranty lies entirely at your hands. The mandate, however, is specific that you show that warranty and if this committee wants to know what type of warranty a given ship, or a given plane, or a given weapon gets before you come up and ask for 500 more copies of it, we can get that information from you and really know if it is going to do what it is intended to do.

Senator **Andrews**. I appreciate that very much. Thank you, Mr. Chairman.

Senator **Stevens**. Thank you. I am pleased, Mr. Secretary and Admiral Watkins, with your positive approach to the warranty issue. It does, as I think Admiral Watkins pointed out, tend toward increasing quality control if properly utilized. It is a matter the committee is obviously interested in and will continue to be interested in.

BUDGET QUESTIONS

Mr. Secretary, let me go back to the perennial problem that besets this committee, and that is the question of dollars. Not only dollars in terms of budget authority in terms of outlays, I have in mind suggesting to this committee this year the concept of grouping items for procurement or grouping portions of the O&M budget and either saying to you before that decision is finally made by the committee, by the Senate, will you tell us from this area we have cut *x* dollars items in the procurement budget, maybe ships, aircraft, spare parts, and just staying out of this area, we need to take *x* dollars as a general reduction; would that be fair to you?

Secretary **Lehman**. Mr. Chairman, as an exercise in managing your responsibilities, it sounds like a very sensible way. But, I have to take the opportunity, again, to say I believe that cutting the President's request is not justifiable and that it will hurt our national security.

I think that we have to keep saying that these are not frivolous requests, that the President's request has already been reduced by many billions below what he projected the need was in May 1981, and that the President's request is an austere one. I believe it should not be cut.

Senator **Stevens**. Mr. Secretary, I would think ill of you if you did not make that rebuttal to the question, and that is carrying out your responsibility, and we have ours, too. My question really gets back to the mechanism of effecting a way to comply with the directives targets we think we will get from the congressional budget resolution.

As you know, under the budget resolution, we could not take a bill to the floor that would exceed the dollar level adopted by the Senate. It would be subject to a point of order. It would be returned to the committee if we exceeded the level of the budget. It then gets to a question of what the mechanism should be. Should we make the decision here, have the committee recommend to the Senate, have money taken out of individual items or should we group them.

I have in mind, as I said, grouping R&D and a series of related items and saying from that series, we must reduce the total request for that series by a given amount and allocating that, we would have to make that recommendation. But it would seem to me that if that procedure were followed, you might actually go back to some of the suppliers of those items and say: "We are going to have to cut out this kind of money, but if you all find a way to absorb part of it, maybe no one has to take that cut as deeply as it appears;" would that work?

Secretary **Lehman**. It is hard to answer that in the abstract, but it underlies what is essential as this year goes on, that you have complete and immediate access to the data that you need to see what the impact of such an approach would be. You may be sure that every asset in the Navy Department will be at your disposal as you proceed, and we will help you to see all of the impacts of any particular approach to cutting or adding to the President's budget.

WASTE INVESTIGATIONS BY SERVICE PERSONNEL

Senator **Stevens**. I think the portion of the Department of Defense under your jurisdiction has responded more to the problems of the budget than the others, more readily. Despite the cuts, you still are coming in under budget in some of the items and certainly going more to the competitive aspect of bidding which, in the long run, is saving dollars.

I think my good friend from Mississippi, who has such a distinguished background in terms of congressional relationships with the Department of Defense, put his finger on it, though. We need to find more ways to respond to the feeling that exists among the public at large that there is a large amount of waste in the expenditures by the Department of Defense. He has, in effect, called for some volunteers from people in the services to come forward and try to identify some of that waste, as I understand what he said, and to urge all of us to find ways to reduce expenditures while still accomplishing the job.

I am trying to see if this committee might follow our good friend's suggestion to see if it is possible to reduce the level of funding while at the same time giving you some tool to maybe achieve a little bit more the objective that we both seek, despite those cuts. We will consult further on it. Senator Stennis.

Senator **Stennis**. Mr. Chairman, I thank you for your remarks. I want to say here, I think this group is trying, this team—they are action people; they have a lot of know-how, and they are effective. I am encouraged by it. I think without making individual comparisons, 10 or 12 years ago, we had real trouble with ships, so it is to their credit. Mr. Chairman, I would like to submit questions for the record.

Senator STEVENS. General Kelley, Mr. Secretary, Senator Stennis wants to follow up with some questions for your response. Senator Rudman.

MARINE CORPS LIGHT ANTIARMOR PROGRAM

Senator RUDMAN. I just have a couple of brief specific questions on some systems. General Kelley, please bring the committee up to date on the Marine Corps' light antiarmor program.

General KELLEY. The light antiarmor program—the light-armor vehicle?

Senator RUDMAN. I am talking about the weapon, you were working with several weapons to replace that.

General KELLEY. Indeed. As you well know, we went through an evaluation process with the U.S. Army which evaluated a number of domestic and foreign-made antiarmor weapons systems. This evaluation has been completed. The Swedish AT-4 was selected for further testing. The Army also is now in the process of their own internal evaluation. We have several choices, several options, that are still open to us.

In a related matter, we have in the procurement process a multipurpose assault weapon called SMAW which has a bunker-buster warhead. We are looking at the development of an antiarmor warhead for the SMAW which would then give us a universal capability with that particular weapons system.

Senator RUDMAN. Is that the Israeli weapon that will be manufactured under license in this country?

General KELLEY. That is, sir.

Senator RUDMAN. And your experience with that weapon appears to be satisfactory if it proves out?

General KELLEY. The SMAW with the bunker-buster warhead has been very satisfactory. We are procuring that now. That would give us one launcher with a multiple capability.

CLASSIFIED ASPECTS

Senator RUDMAN. Thank you very much. Admiral Watkins, and Secretary Lehman. I am a little confused about something that we discussed late last year. I had an opportunity to go out and actually meet with them on some of their missions and get a briefing on what their problems were. The Secretary of Defense, back in his annual report that we all have, indicates that the costs were too high and looking to upgrade the EC-130, the Defense Nuclear Agency, in their report, without talking about their classified aspects, seems to indicate that the new engineering change proposal incorporates into that 130 some very good changes, weight reductions, and so forth. Yet I understand from information I have, that you are requesting another look at the E-6A. Can you comment as to what you both feel on that subject?

Secretary LEHMAN. Yes, Senator; you have accurately described the current Department of Defense position. The Department of the Navy has recommended that this decision be reexamined.

We have sent forward for your consideration a budget amendment that would reopen that issue. It is our belief that at the current level of the President's request, given the performance since the Secretary of Defense's annual report was prepared last year, that the contingency fund, which you will find in the President's budget for shipbuilding, could possibly better be spent for increasing our reconnaissance activity through a better airplane, the E-6A. At the current level in the President's request, we believe E-6A makes sense because of the additional survivability and reliability it would provide over the EC-130. But we believe that the EC-130 can do the job. We are not recommending the E-6A at the current budget level as a better buy.

E-6A AIRCRAFT

Senator **Rudman**. Am I correct that the electronic suite in the E-6A would essentially be what the upgrade would be that would go into the EC-130, same system?

Secretary **Lehman**. Same system.

Senator **Rudman**. But the aircraft itself has longer legs, ease of operation——

Secretary **Lehman** [interposing]. That is correct.

Senator **Rudman**. I ask the question, obviously, because of the conversation you have been having with the chairman. I forget the exact number that is on the whole cost of the program, but as I recall, it is several billions of dollars for the E-6A.

Secretary **Lehman**. The total program cost would be approximately $1.9 billion.

Senator **Rudman**. About $2 billion.

Secretary **Lehman**. In the negotiations that were going on concurrently with the budgetary considerations, we realized great progress with the Boeing Co. and have achieved a reduction in price of $400 million from last year's estimate. We believe that we have a very good value for the taxpayer in that airplane. But like everything else, it is a question of what Congress is going to do with the level of the budget.

Senator **Rudman**. Personally, I see the great advantage of the Boeing proposal, the E-6 over what we presently have, the EC-130. There are a lot of reasons for it. If we are going to get into the real tough nitty-gritty of coming down and trying to get everything we need to keep the kind of readiness we are talking about, to keep to OM figures where they ought to be and make hard choices, these are the kind of choices we may have to make.

I am not prejudging it; I am simply saying that those are the choices we may have to make.

T-45B PROGRAM

One other question. This would be for Admiral Watkins. On the T-45B, funding has been denied for that. What is the program for the T-45A?

Admiral **Watkins**. I believe I better ask the Secretary to take that.

Secretary **Lehman**. Let me, for the record, again lament the passing of the dry Hawk which I think was a good way to save dough for the taxpayers. That is past. Congress has spoken and now we want to proceed on the original schedule with the wet Hawk. We will make every effort to see that it doesn't get goldplated and stick to the original IOC of 1991. It is a good program.

Taking the guidance of this committee, we are not reinventing a new airplane; we are taking a very fine airplane developed by the British and building it largely in this country as the new carrier trainer for the future, using one airplane where we now have two, the T-2C and the T-A4. This will be much more economical, to have a single airplane to do both jobs.

Senator **Rudman**. The Air Force already has its requirement for new trainer and that is going forward. Just looking in retrospect, I understand very well the difference between carrier-qualified aircraft and noncarrier-qualified aircraft. Looking at this, and you weren't here when all this started, and neither was I, looking in terms of perspective, wouldn't it make more sense in the future to try to get some unified trainer, so that these youngsters learning to fly, dial pretty much with the same principles involved at the very outset?

Secretary **Lehman**. Senator, I understand your point. It is quite possible to train naval aviators in the T-38's, for instance, and we could train them in the airplanes the Air Force develops for the future, but I do not believe you save any money that way.

For instance, you would have to add to the Air Force development program the carrier-unique kinds of assests such as special kinds of speed brakes, which they would then have to carry around forever in a non-cost-effective manner. We, on the other hand, would have to add the supersonic capability which the Air Force believes is essential for their advanced trainer. We don't want the supersonic capability, so we would be carrying around afterburners we don't need. Those inefficiencies would more than compensate for whatever savings you get by higher production rates of one trainer.

I believe, as the commandant pointed out and as history has shown us in the last 10 years, that the best way to achieve commonality and cost savings is by the way we are going about the JVX program where one service develops it for one clearly defined set of requirements, and then other services can use that airplane if it fits. But trying to force together essentially different requirements results in a TFX at the other end.

If I had been present at the creation of this program, which I wasn't, I would do it exactly the same way except, I would try harder to get the dry Hawk and buy them both. But I think we are on course.

Senator **Rudman**. Thank you.

Senator **Stevens**. Thank you, Senator. Senator Andrews just said if I wanted to in Alaska, I could call up the warranty provision on the Senator's initiative there. But it is the Andrews' initiative in North Dakota. I told him we understand warranties in Alaska more than they do in North Dakota because we are at the end of the pipeline.

I know Senator Kasten is here. Senator Kasten.

Senator **Kasten**. Thank you, Mr. Chairman. Mr. Secretary, first of all, I want to just congratulate you on the job that you are doing.

I assume other members of the committee have said this before I arrived, but all of us respect the work that you and others that are with you at the table are doing.

DECLINE IN SHIPYARD MOBILIZATION BASE

According to the Shipbuilders Council of America, there has been a decline—someone said an alarming decline—in the shipyard's mobilization base since 1982. According to the numbers that I have got here, at that time, there were 164,000 skilled production workers in 119 shipyards; 52,000 were working in non-Government shipyards. The remainder in 110 private yards. Since then, in just a couple of years, 10 of the private facilities have closed or announced a near-term plan to close while the private workforce has decreased by, according to my figures, 13,000 production workers.

A large yard in Sturgeon Bay, Wis., for example, is currently employing about a third of its normal work force. By the end of the summer, it could be down to one-fifth. Don't you believe that it is important to maintain this shipyard mobilization base aspect as Secretary of the Navy?

Secretary LEHMAN. Senator, I believe that very strongly, and I fully concur in the obvious concern that you have expressed to me privately as well as publicly about what has been happening in the industry.

Today, the Department of the Navy accounts for 75 percent of all work in American shipyards. In your own Great Lakes area, one of the most precipitous declines has taken place. A lot of people don't realize that the Navy obtained over 1,000 of its ships and craft for World War II from the Great Lakes shipbuilders. That production base has virtually disappeared, with very few exceptions.

It concerns us greatly because in time of war, it is essential to keep the fleet operating and it is essential to turn out the replacement ships and perform the modernization that is needed. That is why the Department of the Navy has made such a special effort to bring competition into shipbuilding, to spread the work around, to get a balance and to put as much work into as many shipyards as we can and still retain efficiency. We have done so.

We have ships built in some 25 private yards now around the country and repair work is being done in a great deal more than that. We cannot, however, substitute for the loss of commercial business. That is a larger problem that the Department of the Navy simply cannot deal with. But, if there were any substantial cuts in the projected Navy shipbuilding, it would be disastrous to the overall industrial base.

CONTRACT DISBURSEMENTS

Senator KASTEN. Specifically, what kind of steps have you taken to spread out the contracts in order to sustain this broader base? I don't know of any specific actions that you as Secretary of the Navy would take.

Secretary LEHMAN. To use a number of examples, we have required that there be two yards, not one, building the CG-47. There was only one before. We have reinstituted competition in the submarine program. There had been a very long hiatus where very,

very few submarines had gone to any yard, other than Electric Boat.

We have brought competition on line in mine-countermeasure ships. In the MSH ship, we are running a competition right now between two teams.

Senator **Stevens**. Senator, let me interrupt you, if I may. If you would pardon me for just a moment, Senator Stennis and I both have been called away. We do appreciate your appearance here, and I ask Senator Rudman to chair the balance of this hearing. I, too, will submit questions I have prepared to ask you. We thank you for your appearance, Admiral, General Kelley, Admiral Cooper, Mr. Comstock, you are doing a fine job. I can't add to the praise Senator Stennis has given to you. He is gone now. To anyone in the profession, it ought to be an accolade coming from the Senator who has so much experience in dealing with the Department. I congratulate you for being congratulated by him.

Secretary **Lehman**. Thank you very much, Mr. Chairman.

As I was saying, the mine-countermeasure ships, the TAO's, the T-5's, and the TAKX ships, the 13 TAKX ships are being built in 4 different yards, for instance. We expanded the LHD-41 class production from one yard to two and we are now competing LCAC for a second source. So this administration has spread the work in nearly every program where it is physically possible to do so.

MINE-COUNTERMEASURE EFFORT

Senator **Kasten**. Let me talk specifically about the mine-countermeasure effort. Before last year's markup, I asked the Navy for a briefing on the Soviet mine-warfare threat. That briefing, I think, was a real opener for all of us. It indicated how cheaply and how easily the Soviets could, in fact, close American ports and some strategic chokepoints along the sea lines and how little capability we had currently to counter this threat.

The Navy has embarked on a mine-countermeasure ship program, but there has been a tendency over the last couple of years to move more slowly on this problem than at least the threat presented to us a year ago seems to demand.

MCM PROGRAM

What is your assessment of the MCM program? Do you believe it is fast enough given the magnitude of the threat?

Secretary **Lehman**. As you know, Congress has cut two MCM's out of the program over the past years. We regret that. We would rather have had those ships appropriated, but we believe that the program is on course. It is going to be a fine ship. It is being built as part of an overall plan that includes a substantial dependency on the mine-countermeasure ships of our allies to carry their fair burden of it.

Now, within the constraints of affordability, I believe we are on course, but given more money, I think we could use more ships.

Senator **Kasten**. One of the concerns, of course, I have a special interest in this because they are one of the few defense contracts that we can get back in Wisconsin, but a mine-countermeasure ship just isn't as flashy as a carrier or a sub and not quite as much sex appeal, doesn't look quite as good in the window, and there is a tendency for some to believe some of your gang may not be fighting as hard for those as they might be fighting for some of the other flashy items. I think it is important, particularly after the briefing we received last year, to understand this is a significant, strategic problem and it fits along with all the rest, even though that mine-countermeasure ship might not look as pretty going across or the movies might not be as interesting or it might not be quite as flashy.

I hope that you will continue to emphasize the interest in this area.

Secretary LEHMAN. I will do so. I agree with you completely, Senator.

SURVIVABILITY OF BALLISTIC-MISSILE SUBMARINE

Senator KASTEN. Supporters of the ballistic-missile submarine stressed its survivability over land-based ICBM's. We are talking about the nuclear submarine being close to vulnerable in certain kinds of circumstances. It is my understanding survivability is degraded when it has come near the surface to receive a message or a command.

To lessen this vulnerability, the Navy has been working on extremely low frequency, ELF system, the bulk of which lies in Wisconsin. As you know, the program has been delayed by an injunction issued by a Federal judge in Madison, Wis. First of all, what is the current status of ELF, and do you believe this injunction will halt the program all together?

Secretary LEHMAN. I would like to defer to the Navy's senior submarine man on this answer.

Admiral WATKINS. We are trying desperately now to straighten out what we think, again, is a confused understanding of the environmental impact of ELF. We have been for many, many years under examination, and I think we have proven time and time again to the courts and to the local people who have a justifiable interest in the environmental situation regarding ELF, we will give them a fair story. I think this has been done.

Apparently, the court there, or one judge, felt that there was new information. We don't know of any new information. We have debated this ad nauseum over 15 years, and degraded to the current situation with ELF, which is a form of the old sanguine system that we had planned initially.

Senator KASTEN. You changed the name three times.

Admiral WATKINS. Three times, yes. This is one of the most important systems we have for our U.S. strategic forces at sea, and it so happens that it also turns out to be a very effective device for our nuclear attack submarines who, by this summer, will begin to receive the nuclear-tipped Tomahawk. Therefore, it becomes doubly important to have that system on line so that ships can be called up and given the important messages from the National Command Authority which ELF would signal. Therefore, it is a critical system to us, and we need to get on with the program.

EFFECT OF INJUNCTION

Senator KASTEN. Admiral, do you believe that the injunction will halt the program all together?

Admiral WATKINS. It certainly will if it stands, Senator.

Senator KASTEN. Or do you believe the Navy has essentially complied with the law upon the basis of which the judge has issued the injunction?

Admiral WATKINS. We have complied with the law at this point, but the injunction also prohibits the installation of receivers on submarines. I know of no injunction in the past that can transfer jurisdiction of what goes on a Navy ship from a local court and yet this is in litigation now.

I don't know what the outcome of that will be. It is an interesting case, but it needs rapid resolution. We can stand the injunction for about 9 months, and then it will impact on fielding ELF for our strategic submarines and that will become very important in the context of national security.

ELF IMPORTANCE TO STRATEGIC COMMAND CONTROL

Senator KASTEN. Admiral, for the record, how important is ELF to our strategic command control and communications of the C——

Admiral WATKINS. It is essential to maximize the alert readiness of the security reserve force which is the principal bargaining tool for the National Command Authority either prior to or subsequent to nuclear exchange. It is a critical communication system.

Senator KASTEN. Thank you, Mr. Chairman.

RESOLVING INJUNCTION QUESTION

Senator RUDMAN [presiding]. Admiral Watkins, a couple of other questions. To follow up on my colleague's questions, is the general counsel of the Defense Department moving in a forthright manner to have that injunction resolved as it pertains to installation procedures on submarines?

Admiral WATKINS. Yes, sir, we are talking all of the legal action we can, including our own Judge Advocate General who is right in the middle of the process. We have to go through the laborious legal process.

Senator RUDMAN. I have some familiarity from earlier on in my life with Federal judges and orders. That a injunction has to be the most outrageous thing I ever heard in my life. I suspect the judge in Wisconsin can possibly enjoin things on land in Wisconsin. I hardly see some sitting Federal judge telling the Navy what it can and cannot do on Navy ships. I think you ought to move forthrightly and have that judge go back to law school.

Admiral WATKINS. I had all my Judge Advocates standing before my desk and told them the lecture you gave me, and they told me I didn't know much about the law.

Senator RUDMAN. Tell them from someone who does that you are right and they are wrong.

Admiral WATKINS. Thank you, Senator.

DDG-51

Senator **Rudman**. On the DDG-51, the budget includes $1.2 billion for the first 51 class. Since it appears to be, according to some reports, certainly CBO, less capable than the CG-47, they recommend the 51 be deferred and that we go ahead and build additional CG-47's over a 5-year program for a net savings of $6 billion.

I would like your reaction and the Secterary's reaction to that.

Admiral **Watkins**. I think the rationale given there, Senator Rudman, is extremely fallacious. What we are trying to do is field systems out there that can deal with the threats that face us by the year 2000 and the ships have to be capable ships.

We balance of our forces in a 600-ship Navy to give us a range of weaponry out there from the CG-47 to the *Arleigh Burke* class to the 963-ASW units down to the frigates. It gives us the range of capability to deal with the threat.

We have two classes of destroyers, the DDG-2 class and DDG-37 class, which will reach 30 odd years of life by 1990. They cannot be modernized. We have studied it and studied it over and over again. They are at the end of useful life. It would be inefficient to modernize them. There are 33 ships in that category. We are asking for 29 DDG-51's over time to replace those guided-missile destroyers.

We also need to distribute our power and also have been criticized by the Congress of putting too much in any one unit. This is an attempt to use the spectrum of war-fghting capabilities we need and yet distribute the power out there.

This DDG-51 won't be as capable because it won't have the fourth illuminator or quite the redudancy that the CG-47 has; it won't have quite the number of vertical-launch tubes and the like. It is the first ship we designed right in the hull, mechanical and electrical area since World War II. This is a precision-built ship and it is done with some cost-saving techniques that the Secretary has talked about earlier that I think are very impressive.

So we have in combination here something that is absolutely essential to the power, to have the capability to deal in a high-jamming environment, with plenty of Stealth missiles coming at us, the kind of things that are going to get us in trouble if we don't go to something like the *Arleigh Burke* class right away.

We do have ships that are coming off line in the 1990's and, therefore, we consider it essential we get on with this class, and we think $700 million for the sixth and follow-on ships is about the right range.

In fact, we went back and escalated the DDG- 2 and 37 class and it just comes out between the cruiser and ASW destroyer in cost.

Senator **Rudman**. What is the displacement of 51 compared to 47?

Admiral **Watkins**. 8,300 tons.

Secretary **Lehman**. Compared to 9,500.

Senator **Rudman**. I want to get that on the record.

Secretary **Lehman**. The ceiling price, which will be signed into a fixed-price contract, will not exceed the latest construction follow-on ship cost of the CG-47. It is inconceivable to me how there would be any savings because the slope will come down in price as the CG-47 stays at about $1.1 billion in 1983 dollars.

Senator RUDMAN. What is the length of the acquisition period for the 29 DDG-51's?

Secretary LEHMAN. We are looking at about a 7-years acquisition period for the class of ship. We would like to get 3 yards producing those destroyers to get the benefits of competition and mobilization base. We beileve that we can save a good deal of money by having three producing yards competing against each other as we did in the FFG-7 class, the most successful procurement ship we had.

A-6 ATTACK AIRCRAFT

Senator RUDMAN. I guess this will be my final question of the morning, since we are at noon and we have another meeting, and you have been here for 2½ hours. Let me ask this question and please give a general answer to it because we haven't touched on it. There was quite a discussion of A-6 attack aircraft; when we will have advanced attack aircraft, and the Navy's current thinking on that. I looked at your submission and, obviously, there have been some changes——

Secretary LEHMAN. Yes, the current Department of Defense position and the Navy's position, as always, are in complete harmony. That is, we intend to upgrade the A-6 aircraft and the F-14 aircraft in a manner that will bring the benefits that we paid for in the F-14 in reliability, survivability, and increased mission effectiveness to both airplanes and to achieve commonality of the avionics; 90 percent commonality of basic avionics is our goal for our four front line tactical aircraft, the AV-8B Harrier, the F-18, the F-14, and the A-6. This will be a product improvement kind of thing. We are going to develop a new attack aircraft later in the 1990's when the evolution of new technology warrants it.

Today, it makes sense for us to stay with the A-6 and the F-14, to improve the reliability of the avionics and the maintainability until we get to a point where the new technologies make it cost effective to go to a new airplane.

There are going to have to be some adjustments in the funding in the current budget. We will be coming forward with a budget amendment to move some of that money into different accounts.

We are close to reaching overall agreement on the contract form and we will be briefing the committee in detail. This program is solidly supported by the Secretary of Defense and Department of the Navy.

COST OF A-6 UPGRADE

Senator RUDMAN. Have you a projected cost as of yet for the A-6 upgrade, or is that something you would like to bring back to us at a later time?

Secretary LEHMAN. We have a not-to-exceed ceiling of $500 million, nonrecurring, for the A-6 upgrades. We believe it is quite possible that we can come in under that.

Senator RUDMAN. So essentially, what you are doing is putting into practice, I forget which number it was but one of Secretary Carlucci's initiatives, in which he suggested you try to build on current systems until there was such a quantum leap in technology as to justify going ahead. You are going to wait for that technology to become available and then you will come back to us at some future time with your request.

Secretary **Lehman**. Yes, sir.

Senator **Rudman**. I think that makes very good sense.

SUBMITTED QUESTIONS

The subcommittee has additional questions which we will submit for your response. They will be inserted in the record at this point.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Senator Stevens: Last year this Committee was unsuccessful in its attempt to hold the rate of construction of SSN-688 submarines to three per year -- yet isn't this exactly the kind of action which must be taken to help meet Congressional spending limitations and to preserve budget options in the future?

Secretary Lehman: In the case of SSN's, we estimate a force level of 100 is needed to combat the expanding and changing threat posed by Soviet submarines and support increasing requirements for multimission forces able to conduct forward area offensive operations against submarine, surface and land targets in the open ocean. In order to overcome the low authorization rate of two SSN's per year maintained over the last nine years and reach and maintain our mid range force level requirement of 100 SSN's by 1990, we need to build four SSN's per year. This also results in substantial unit cost savings compared to each unit at a rate of 3 per year.

Battleships

Senator Stevens: Rumors abound that the Navy wants to accelerate the battleship MISSOURI by starting shipyard work this summer -- about three months ahead of schedule Mr. Secretary, please set the record straight on this issue, and if the acceleration is indeed part of your current plan, what is the rationale?

Secretary Lehman: A SCN reprogramming request has been forwarded to the Congress seeking approval to accelerate MISSOURI's reactivation. The events which lead to NEW JERSEY's extended deployment have demonstrated the role and need for battleships. Advancing the reactivation of MISSOURI allows the formulation of a workable deployment plan that will allow for proper training, workups, and scheduled maintenance. It will also allow the stabilization of the manning at Long Beach Naval Shipyard and avoid disruptive layoffs. Most importantly it will permit considerable cost savings compared to the original schedule.

Reactivation

Senator Stevens: If a reprogramming is to be submitted, is it your intention to fully fund the $422.6 million to begin reactivation in FY 1984?

Secretary Lehman: A reprogramming request has been submitted to Congress for $73.4 million in FY 1984. These reprogrammed funds would allow prefabrication work to be done prior to the arrival of the ship in Long Beach; ship arrival in late spring instead of August at which time initial rip out, tank cleaning, piping installations and gun mount removals would be accomplished. The issue of full funding has been raised and we are studying this possibility.

Battleships

Senator Stevens: The FY 1984 five year shipbuilding plan includes reactivation of the battleship WISCONSIN in FY 1986. Your current plan slips WISCONSIN to FY 1987. Does this suggest a rethinking of the utility of reactivating a fourth battleship?

Secretary Lehman: On the contrary, NEW JERSEY's performance to date has strengthened Navy's position to obtain approval for all four IOWA class battleships. Availability of funds drove the slipping of WISCONSIN.

Manpower

Senator Stevens: According to the Navy Times you plan to turn over the WISCONSIN to the Reserves. Given Congressional reluctance to authorize your manpower requests wouldn't the IOWA or the MISSOURI be better candidates?

Secretary Lehman: The Navy does not intend to transfer WISCONSIN to the Naval Reserve Force. There is an important requirement for 2 active BBs per fleet and we intend to activate WISCONSIN during the current 5 year plan.

Senator Stevens: The Army is adding a new division without increasing its manpower. What have the Navy and Marine Corps done to reduce support requirements and increase war fighting capability without increasing active military?

Secretary Lehman: We are increasing our war fighting capability considerably. New and modernized equipment is being phased into the fleet to meet the 600 ship goal by FY 1989. An average of 15 additional ships will join the fleet each year. Support requirements must increase in relation to this growth or readiness will decline seriously.

To keep active military growth to an absolute minimum, however, we are rapidly expanding our Naval Reserve program. Our recently submitted "Report to Congress on the Navy's Total Force" shows our progress in making maximum use of the reserves in meeting our mission requirements.

Other programs are in effect to maximize efficient use of civilian and contractor manpower which further reduce our military manpower requirements.

The Army is wisely taking advantage of the permanent CONUS basing of much of its force structure to increase the number of divisions by spreading existing active end strength over more units and expanding Selected Reserve end strength by more than 100,000 to fill division mobilization strength. The Navy deploys all its Battle Groups in peacetime and cannot substitute SELRES for active duty personnel in that way.

Aviation Officer Continuation Bonus (AOCB)

Senator Stevens: Mr. Secretary, last year you asked us to authorize payment of Aviation Officer Continuation Bonus for Navy and Marine Navigators in the Appropriations Act. Why didn't the Marines request funds for this program in fiscal year 1985?

Secretary Lehman: AOCP is not funded in the Marine Corps' FY 1985 budget because according to the criteria included in the '84 legislation there are no longer pilot or NFO shortages in the Marine Corps.

Aviation Officer Continuation Bonus (AOCP)

Senator Stevens: Does this mean that the Marines to not need the AOCP program in fiscal year 1985?

Secretary Lehman: Aviation Officer Continuation Pay (AOCP) has had a significant positive impact on Marine Corps aviation. The experienced aviators retained through the AOCP program have been the backbone of our aviation community during the beginning of our transition to three new aircraft: the F/A-18, the AV-8B, and the CH-53E. Our improvement in aviation safety rates, even while this transition has been in progress is attributable to the increased experience level of our aviators. As the transition to our new aircraft continues through 1992 we will continue to need highly skilled, experienced aviators. They can only be obtained by retaining on-board personnel.

Navy R&D Budget

Senator Stevens: Mr. Secretary, the Navy has five major programs which account for more than one-half of your $2.2 billion R&D increase over FY 1984. They are

Trident II SLBM	+$625 million
F-14 Squadrons	+$252 million
JVX	+$112 million
VTX Trainer	+$89 million
New Design SSN	+$174 million

Which of the five is your highest priority? Which of the five is your lowest priority?

Secretary Lehman: The FY 1985 budget reflects the President's priorities on defense and other important needs and represents an optimum balance between many programs which have competed for funds. Accordingly, I am not prepared to recommend R&D programs where these priorities might be changed. While it might be argued that some R&D programs are "more important" than others, the complexity and diversity of the Navy's operational mission make necessary a balanced and integrated RDT&E which is developed in close coordination with procurement, shipbuilding, operations and maintenance, and personnel budgets as well. The budget you have before you represents our best judgment of the balance among these complex elements.

HARM Low Cost Seeker

Senator Stevens: Can the low cost seeker designed at the Naval Weapons Center at China Lake for the HARM missile be successfully developed prior to a buy-out of the HARM program by the Navy and the Air Force?

Secretary Lehman: Probably, but the program buy-out year is dependent upon both production rate and inventory requirements. Even if the HARM program were bought out prior to the successful completion of the low cost seeker (LCS) effort, the continued development of the LCS in conjunction with the HARM program will have a substantial payoff. Since January 1983, the threat of second prime sourcing, and the funded development of a LCS, have together resulted in the projected savings of $1 billion over the life of the HARM program.

The LCS is essential apart from HARM in order to have lower cost technologies available for less costly follow-on missiles after HARM.

Senator Stevens: If not, why should Congress continue to press for accelerated development of the low cost seeker for HARM? Isn't this technology applicable to a wide range of missiles other than HARM?

Secretary Lehman: We need to continue accelerated development of LCS technology now because of the positive effects it is having on the technological industrial base as well as cost savings, both actual and projected, in the sole source HARM program. LCS also offers the promise of significant improvements for both HARM and future antiradiation missile requirements of both the Navy and the Air Force, and much lower cost.

TOMAHAWK Missile

Senator Stevens: Mr. Secretary, can you explain why the Navy did not competitively award the fiscal year 1984 Tomahawk contracts as was your plan when you sought and received our approval to initiate dual source procurement?

Secretary Lehman: As part of the preparation for dual source competition, the Joint Cruise Missiles Project conducted a series of Dual Source Production Reviews at both General Dynamics/Convair (GD/C) and McDonnell Douglas Astronautics (MDAC) from July through October 1983. These reviews indicated that both contractors had committed resources to demonstrate their ability to produce AURs and technological transfer was was largely on track. On the other hand, there were key manufacturing processes and procedures that had not yet been demonstrated and would not be fully demonstrated prior to scheduled contract award in November. It was the Projects Manager's assessment that the technology transfer program was not at a point that could technically justify awarding a fully competitive contract to either contractor. Additional time was required to demonstrate the ability to produce quality guidance sets at GD/C and quality air vehicles at MDAC. Neither manufacturer was in a position to produce the required 10 to 12 AURs per month with a reasonable degree of confidence that quality standards and production schedules could be met. The quality and delivery schedule of 244 missiles was considered to be at significant risk if full dual source competiton was allowed to proceed for FY 1984. Therefore, the Navy decided to delay the competition one year and use that year to ensure each contractor was fully ready to produce quality AURs in the quantities required.

Although full competition did not start in FY 1984, the effort expended was very worthwhile and places us in an excellent position to begin full competitive production in FY 1985. Additionally, the Navy is already experiencing some of the benefits of competition in FY 1984. Both GD/C and MDAC are acting as competitors in developing the manufacturing efficiencies and procedures necessary in order to be in position to compete as well as in the manner in which they are conducting business.

Senator Stevens: Are you planning sufficient annual production to support dual source competition?

Secretary Lehman: Based upon problems that faced the program a year ago Navy planning for TOMAHAWK buys in FY 1985 through 1987 were reduced in the FY 1985 budget process. As a result of the progress within the program, those planned reduced quantities have been subsequently increased in FY 1985 and FY 1986. These requested missiles, if authorized by Congress, will support competitive Dual Source procurement and result in substantial procurement savings to the government.

Senator Stevens: Can you guarantee to me that all future Tomahawk and Ground Launched Cruise Missile procurements will be made competitively for all-up-rounds? If not, what's the problem?

Secretary Lehman: The Navy will award all FY 1985 and out year AUR contracts competitively.

Senator Stevens: At a unit cost of at least $3 million, do you still think Tomahawk is affordable as a conventional weapon carrying only a 1,000-pound warhead?

Secretary Lehman: The judgment of the affordability of a conventional TOMAHAWK with a 1000 lb warhead is not made simply based on the warhead size. The TOMAHAWK Cruise Missile distributes strike and anti-surface warfare capability to a wide variety of surface and subsurface platforms thereby providing a significant force multiplier effect for the Navy's strike capability and anti-surface warfare. It significantly enhances and expands the range of conventional naval warfare options. At the average unit flyaway cost of $2.37 million (esclated, then-year dollars), TOMAHAWK is an affordable method of providing this important increase in capability.

The conventional 1000 lb warhead is used in both the

TOMAHAWK Anti-Ship Missile (TASM) and the TOMAHAWK Land Attack Missile (Conventional) (TLAM/C).

TASM can inflict heavy damage with its single conventional warhead which doubles the warhead weight of the current U.S. cruise missile. TASM extends the cruise missile stand-off attack capability of surface ships and submarines by a factor of 4 to 5, to an operational range of our ability to successfully target and attack enemy ships at long range.

TLAM/C, installed in an array of surface ships and submarines provides the Navy with a new strike capability. This weapon will employ not only a single conventional warhead but also a multiple submunition, or bomblet, warhead. Its versatility, high accuracy and 400 to 700 mile range open new options in naval warfare. TLAM/C will both supplement and complement carrier based aircraft in situations where aircraft attrition would be unacceptably high. It can permit a limited, measured response as an expression of U.S. will and determination without risk of aircraft or pilots. TLAM/C will also allow high leverage strikes against land targets from the majority of attack submarines and surface combatants. The range of options available when TLAM/C is deployed along with carrier aircraft provides a viable conventional attack option which raises the nuclear threshold. Needless to say only high-leverage targets would be worth expending a TOMAHAWK.

F-14D Upgrade

Senator Stevens: Mr. Secretary, the F-14 Squadron line in the R&D account climbs from $42 million to $292 million in FY 1985, due to an accelerated upgrade program. Proposed changes include a switch to the F110 engine, improved avionics and a new radar.

What is the urgency in accelerating this upgrade program?

Secretary Lehman: To date 22 F-14 aircraft have been lost due to engine related problems thus, incorporating a more reliable engine as soon as feasible is required. The improved avionics will allow the effective incorporation of new capabilities such as JTIDS, AMRAAM and ASPJ. The radar will also be improved, not replaced, to provide greater capability, particularly in an ECM environment. The requirement for the new capabilities and improved radar is dictated by new Soviet capabilities. Of particular concern is the development and forthcoming deployment of a new bomber similar to the United States' B-1 aircraft, named BLACKJACK, and long range fighter aircraft. The introduction dates associated with these new Soviet capabilities make it important that we improve the F-14 as soon as possible. The current planned schedule is also the least cost schedule.

Senator Stevens: Won't the announced introduction of the F110 engine into your F-14A fleet seriously complicate logistics and space problems on your carriers?

Secretary Lehman: The critical requirement for a reliable engine for the F-14 overrides the logistics problems created by having to support two different engines for the F-14. We will minimize the problems by ensuring that all F-14 aircraft aboard a carrier are equipped with the same type engine. Actually, the logistics and space requirements associated with the F110 engine will be less than that of the TF30 engine.

Senator Stevens: How much have you requested to support the introduction of the engine?

Secretary Lehman: The total cost to develop and incorporate the F110 engine into the F-14 will be $150 million in FY 1984 dollars. This cost will be spread over a five-year period. The FY 1985 request is for $65.9 million.

Senator Stevens: Wouldn't delaying the conversion to the F110 until the F-14D starts production be better logistically and save significant money this year?

Secretary Lehman: The introduction of the F110 engine prior to F-14D production makes good sense. The actual unit cost of the new engine under the USAF contract is lower than the old TF 30. The number of accidents caused by the TF 30 is so high that we must introduce the new engine as soon as it is available. Early introduction will also provide significant logistic cost savings. Since most of the development costs associated with the F110 engine will be paid by the Air Force, incorporation of the F110 engine does not significantly change the Navy FY 1985 engine funding requirement.

MARINE CORPS' LIGHT ARMORED VEHICLE

Senator Stevens: General Kelley, your LAV program has grown some $60 million (incuding $25 million worth of Army procured vehicles) and 14 vehicles since last year. I understand the Army is now completely out of the program. Explain your program and the budgetary growth and changes.

General Kelley: When DoD terminated the Army from the LAV Program on 29 December 1983, DON and DoD directed the Marine Corps to develop alternatives that would allow the program to continue on an affordable basis. The Marine Corps' original program had a contract acquisition objective of 555 LAV's spread over five years (82-86) of a fixed price (EPA) multi-year contract. It also had an option to acquire 31 additional vehicles in FY86, for a contract total of 586. In an effort to retain the benefits of the original 5 year multi-year contract that were derived from a competitive environment, and to preclude unit costs from escalating, a strategy was developed that shortened the total contract period by one year (82-85), and preserved the original jointly contracted numbers of vehicles to be procured in FY84 (236) and FY85 (292).

This strategy increased the Marine Corps total contract objective to 758 vehicles vice 586. The additional 172 vehicles, which include the 36 vehicles received from the Army as directed by the FY 1984 congressional language, are a significant factor in maintaining the original fixed contract prices established in

1982. These vehicles will enable the Marine Corps to achieve an ultimate goal of three active LAV battalions and a Reserve LAV Battalion that will enhance our total force objectives. It will also enhance the Marine Corps' strategic capability by including LAV companies on MPS, another priority goal.

The original contract which included U.S. Army participation would have provided the Marine Corps with 586 vehicles with a funding profile of $437.9 million. This equates to an average weapon system cost of $747.3K. The current strategy will provide the Marine Corps with 758 vehicles with a funding profile of $581.4 million. This equates to an average weapons system cost of $767K. The increased program cost and its associated increased unit cost are due to various causes, including a change in the vehicle mix and an estimated $31.0 million termination fee resulting from the Army's dropping from the program.

On 29 February 1984, a solicitation was released to the Diesel Division, General Motors of Canada, for their proposal on the restructure of the LAV contract. Their response to this solicitation is expected by 30 March 1984.

P-3/EP-3 Procurement Program

Senator Stevens: Mr. Secretary, last year you wanted to modify existing P-3s as more cost effective than the new EP-3s. Nonetheless, Congress funded 6 new EP-3s. Now your budget would increase regular P-3 production (from 6 to 9) without any EP-3 modification funding. What happened to your EP-3 requirement?

Secretary Lehman: Our EP-3 requirement remains unchanged. We require twelve aircraft to equip two shore-based electronic warfare squadrons. We currently operate ten EP-3E and two EP-3B aircraft whose airframes are approaching the end of their service life. We intend to begin a CILOP (Conversion in lieu of Procurement) program to modify twelve low time P-3 aircraft to a single EP-3E configuration. The modification program will not include a sensor update but will include an improved communication suite, resulting in a viable airframe and operational capability to meet the near term threat.

QUESTIONS SUBMITTED BY SENATOR WEICKER

Proposed Re-Engine of F-14 Aircraft

Senator Weicker: F-14 aircraft are presently powered by Pratt & Whitney TF-30 engines, but based on the results of the Air Force fighter engine competition, the Navy has decided to replace the TF-30 with the F110 engine built by General Electric beginning in FY 87. Prices quoted in the Air Force competition included options for Navy purchase of F110 engines for the F-14.

Since the Pratt & Whitney engine (F100-200) considered in the Air Force competition is not suitable for use in the F-14, how can the Navy decision be considered fair in the competitive sense?

Secretary Lehman: The Navy had announced that it would select an engine from the Air Force Engine competition. Due to fiscal constraints, it did not make sense to procure a unique Navy engine when Air Force engines could be adapted, retaining a high degree of commonality, and the Navy could benefit from the economy of procurement. A fair competition was conducted by the Air Force; both the General Electric F110 and the Pratt & Whitney F100 engines were considered.

Senator Weicker: Pratt & Whitney is developing an engine -- designated PW 1128-- that is compatible with the F-14 and that could be available for installation in 1988. Has this engine been given full consideration by the Navy? If not, why?

Secretary Lehman: The Navy investigated the Pratt & Whitney 1128 engine as a potential candidate engine. The PW 1128 was not as fully developed as other candidate engines. It was the Navy's assessment that Pratt & Whitney development and testing and Navy testing could not be completed by FY 1987. The Navy also recognized the economic benefits, cost, and warranties to be gained from procuring a marinized Air Force engine. The PW 1128 was not part of the Air Force competition. Navy could not afford to develop a new engine alone.

Senator Weicker: Is the Navy planning to modify existing F-14s with the F110 engine? If so, to what extent?

Secretary Lehman: The possibility of modifying existing F-14 aircraft to incorporate the F110 engine is under review. No near term decision is expected. We will backfit if that proves to be cost-effective. With the number of accidents caused by the TF-30 replacement with F110s could well make sense.

Senator Weicker: The Navy is planning to buy about 60 F-14 engines per year or 700 through the 1990s. At roughly $3.0 million each, that constitutes around $2.0 billion in business. A greater level of competition would seem to be in order. Do you agree?

Secretary Lehman: The Navy, through the extensive Air Force engine competition program, did obtain a high degree of competition. The first five years of Navy procurement will be based on prices obtained through the Air Force competition. In view of the limited Navy yearly engine requirements, it is not economically feasible to split the Navy procurement between two engine manufactures.

Carrier Anti-Submarine Warfare (ASW) Helicopter

Senator Weicker: The FY 85 budget includes a request for $44.5 million for the carrier ASW helicopter program. Two different aircraft are being considered for the mission -- Sikorsky's SH-60 and Kaman's SH-2 Super Seasprite. One of these aircraft will be chosen to replace existing SH-3H aircraft.

While the $18.4 million provided in FY 84 will be used to conduct a competition between the two aircraft, the purpose of the FY 85 program is not well defined. How would the FY 85 funds be used?

Secretary Lehman: Approximately $2.15 million of the $18.4 million appropriated in fiscal year 1984 will be used to fund the competition for the Carrier Inner-Zone ASW helicopter. The remainder, plus the balance of funds shown in the President's budget, will be used to fund development and testing of the system selected from the contractors responding to the Navy's request for competition.

ASW HELO

Senator Weicker: Describe the mission of the carrier ASW helicopter?

Secretary Lehman: The carrier ASW helicopter is a multimission vehicle. Its primary mission is ASW in which it must also be able to conduct integrated or independent screening operations, operate as a barrier unit, provide area search and destroy operations, and act as a vectored intercept unit in concert with other ASW units. It must be able to detect, locate, classify, track and attack subsurface contacts in all weather, day and night antisubmarine cyclic operations.

In addition, the CV helicopter has several important secondary missions which include being able to: conduct anti-surface ship patrols, conduct search and rescue (SAR) and medical evacuation operations, provide logistics support, and conduct surveillance and reconnaissance for the elements of the carrier battle group.

CV ASW HELO

Senator Weicker: How could the six ASW helicopters normally assigned to a carrier conduct continuous ASW screening operations?

Secretary Lehman: Six ASW helicopters, flying double carrier deck cycles, can provide 1-1/2 aircraft airborne for ASW screening operations on a continuous basis. Two aircraft can be maintained airborne around-the-clock for surge operations of up to 7 to 10 days. Our current SH-3H helicopters have been providing this capability for many years.

ASW In DEPTH

Senator Weicker: An aircraft carrier is always protected by a vast array of ASW systems on ships, submarines and aircraft, that is ASW in depth. These include cruisers (CG-47) and destroyers (DD-963) that carry LAMPS ASW helicopters. These ASW systems are fully capable of locating and destroying enemy submarines in close proximity to the carrier. Do you agree with that assessment?

Secretary Lehman: The ASW systems addressed in the question are capable of locating and destroying enemy submarines but we are concerned with those submarines that get through, i.e., leakers.

Middle and outer zone ASW forces rely primarily on passive acoustic techniques. The effectiveness of passive techniques is a function of geographical and acoustic conditions and varies according to location, weather, and season. In particular, passive systems are degraded by high ambient noise which prevails in some geographical areas and in the vicinity of all battle groups. A carrier battle group operating in the Indian Ocean could expect to see a larger number of submarines penetrating to the inner zone than one in the Norwegian Sea.

There is a combination of factors in the future that will put even more pressure on the carrier Battle Group ASW inner zone.

- Soviet submarines are becoming quieter.
- Improved battle force quieting and deception/decoy systems will force enemy submarines to close to detect and classify.
- Soviet torpedoes are improving and will be the dominant submarine launched weapon in the 1990's.

The SH-3 with dipping sonar is particularly well suited to combat this threat. It is a quick reaction vehicle capable of autonomous operations in the high ambient noise environment of a battle group and possesses a single package kill capability which can detect, classify, localize and attack a submarine without any assistance. The SH-3 arrives at datum with minimum time late and with minimal risk of submarine counterattack. It is uniquely effective in the high-amient noise environment of the Battle group where an active dipping sonar provides our best capability for submarine detection. The SH-3 system is our best inner-zone presecutor, with the highest kill probability of all ASW platforms.

In summary, the increasing Soviet submarine threat to the ASW inner zone results in a greater reliance on the CV helo with dipping sonar.

CV ASW HELO

Senator Weicker: Navy studies show that LAMPS helicopter using the DICASS sonobuoy and magnetic anomaly detector are superior to the carrier ASW helicopter using the dipping sonar (AN/AQS-13E) in carrying out the inner zone ASW mission. Are you familiar with those studies (ASWSPO #79-109)?

Secretary Lehman: I am very familiar with ASWSPO #79-109 and disagree that it shows DICASS/MAD superior in the inner-zone. Ambient noise levels of the inner-zone were not considered in this study. These noise levels can reduce the ranges of the DICASS buoys to 1/4 of their open area range and can seriously affect the accuracy of the buoy's directional capabilities. Neither of these problems affects the helicopter's variable depth sonar. An analysis that was not made in the study was that of the screeening mission. It would take 13 to 18 DICASS buoys to cover the same area as a dipping sonar and the cost would be between

$18,000 and $25,000 for each hour of screening. The number of DICASS buoys required to fill a screen station for 5 to 7 days of transit would exceed the supply capacity of a CV.

Senator Weicker: Given the size and reactive nature of the carrier ASW helicopter force, a better alternative could involve the purchase of additional SH-60B LAMPS III helicopters, allowing the use of two instead of one aboard each CG-47 ship. Such an alternative could lead to significant savings. Have you considered such an alternative?

Secretary Lehman: The carrier ASW helicopter has multimission requirements and is not just a reactive ASW helicopter. An additional SH-60B on each CG-47 in a CVBG cannot provide the screening capability, the search and destroy capabilities or the pouncer capability available from a squadron of dipping sonar equipped helicopters on the CV. This additional LAMPS helicopter would also be incapable of handling the secondary missions filled by the CV ASW helicopter (SAR, MEDEVAC, Combat Logistics, surveillance, etc.). I have considered the alternatives and believe the replacement of the aging SH-3H's on our CV's with a CV ASW helicopter to be one of our high priority programs.

CH-53E

Senator Weicker: How many CH-53E squadrons are needed to support overall amphibious lift requirements?

General Kelley: The Long Term Amphibious Lift Study has validated a requirement for a minimum of six CH-53E squadrons to meet the amphibious lift requirements of a MAF and a MAB simultaneously. Procurement of these additional aircraft to support our heavy lift commitments will be addressed during the preparation of the DOD FY-1986 five-year program. It should be noted that no Marine Corps force structure increase is required as additional CH53Es will replace current CH-53A/D aircraft in a progressive modernization of existing squadrons. A mid-to-late 1990's structure would envision modernization to an all heavy lift helicopter force of CH-53E aircraft for both regular and reserve.

Senator Weicker: How many CH-53E squadrons are funded and/or programmed in the budget through 1990?

General Kelley: The Marine Corps is currently operating two 16 plane tactical squadrons. A 10 aircraft training element was activated in October 1983 and a third tactical squadron (16 plane) is programmed for stand-up in October 1984. The existing DON procurement plan extends through 1990 and procures aircraft for three tactical Marine squadrons, a Marine training element, pipeline and a 30 year attrition inventory.

Senator Weicker: When is the Marine Corps planning to recommend that the CH-53E production rate be increased to meet requirements?

General Kelley: The FY-85 budget requests 10 aircraft. Increased procurement of 14 aircraft per year for the years 1986-

1989 is currently programmed. Further, the DON is requesting multi-year procurement for the CH-53E over Fiscal Years 1986-1989. The Marine Corps strongly supports the projected procurement increase and multi-year procurement.

Strike at Electric Boat

Senator Weicker: The Marine Draftsmen Association at Electric Boat has been on strike since June 1983. That dispute continues unresolved.

1) What effect, if any, is the strike having on Navy submarine design contracts?

Secretary Lehman: There has been no degradation in quality or schedule performance of the contractor as a result of the Marine Draftsmen Association strike.

Naval Submarine Base, New London

Senator Weicker: Last year Congress decimated the military construction program for the Naval Submarine Base at New London. I don't intend to let that happen again this year and any help you can give in this regard would be appreciated. I have a few questions I would like to ask you about the base construction program.

In view of the sensitive nature of the weapons and equipment located at the Submarine Base, do you believe that the security arrangements in effect are adequate in every respect?

Secretary Lehman: Yes, the security arrangements in effect are adequate; however, improvements are being incorporated. Portions of the base perimeter lack security facilities. There is no fence along the entire north and northeast quadrant of the base. Security personnel patrol this area. Project P-309 (FY 1985) will provide a high chain link fence and patrol road in these areas. Project P-341 (FY 85) will provide additional pier lighting. Future projects are proposed to improve security for the weapons shops, the keyport magazines and the Submarine Base main gate.

Nuclear Subs

Senator Weicker: Because of a shortage of berthing space at the main base, the Navy usually moors 4 nuclear-powered submarines at the State Pier just south of Route I-95. That facility is leased from the State. Are you familiar with this facility?

Secretary Lehman: Yes, the State Pier provides an excellent location for a deployable submarine tender to moor away from the Submarine Base.

Senator Weicker: Officials at the base have expressed some concern about the lack of security at the State Pier. Would you please look into that question and advise me of your findings?

Secretary Lehman: The State Pier security is in the process of being upgraded to require less manpower to enforce security. Project P-321 is currently building barriers in front of the access to the piers and fencing in all of the parking areas to prohibit access to the piers without going through a gate. Proposed projects include reinforcing the north side of the State Pier warehouse to prohibit access to the submarines.

Senator Weicker: The buildings that house the Basic Enlisted Submarine School at New London are in terrible condition. Funds were requested last year for new facilities, but those were denied. The FY 85 budget does not include funds for a new building. Is there any chance that you would support the addition of funds for this project in FY 85?

Secretary Lehman: Construction of a new facility to accommodate the Basic Enlisted Submarine School is a key part of the overall future of submarine training in the New London area. Due to budget constraints and higher priority programs, funding for this project could not be accommodated within our FY 1985 budget request.

QUESTIONS SUBMITTED BY SENATOR ANDREWS

READINESS

Senator Andrews: You mention in your opening statement that: "It is just as possible to lose a war by running out of ships, aircraft, ammunition, or spare parts. The objective is to see that you do not run out of any of those commodities before you have terminated a conflict on your own terms."

It is safe to say you could lose a war if you do not have ships, aircraft, ammunition, or spare parts ready for combat!

Recent news stories would indicate that the Navy is neglecting readiness, maintenance, spare parts, fuel, and other elements to prepare for combat.

How can you convince this subcommittee of the need for a 600 ship Navy given a GAO report saying only eight of the Navy's aircraft carriers could be put to sea within two months of the outbreak of war, and only 60% of its warplanes are considered "combat-ready"?

Secretary Lehman: Shocking as it may sound, not all stories in the newspaper are accurate. The stories you cite are wrong. All readiness measures have increased dramatically in the past three years. Readiness in the Navy and Marine Corps has, in fact, shown dramatic improvement over the last three years. The percentage of ships reporting C-1 or C-2, which is fully combat ready, has nearly doubled, going from 25% to 49%. This has occurred even as the fleet has grown in numbers. Increases in aircraft readiness have been equally dramatic. Even as we have increased the number of aircraft squadrons, we have increased their readiness nearly 30 percent. As measured by virtually every statistic; personnel training, equipment capability, spare parts and the sheer common sense basis of how many airplanes in a squadron are ready to fly at any given time and how many of the air crews are fully up to speed and trained, we have a very ready fleet today. Our fleet is more ready than it has ever been in peacetime.

The GAO study you cite is in serious error, and we have pointed out the inaccuracies to the Comptroller General. We expect future such studies to be corrected.

Senator Andrews: How is the Navy going to correct this readiness problem with only a 7% spending increase in combat essentials like maintenance, spare parts, and fuel?

Secretary Lehman: The budget request for carrier operations in FY 1985 will continue to provide four deployed CVBGs operating under flexible operations concept, as well as full training workup operations in the nondeployed fleets. The request will procure the aviation parts and equipment that will reduce the number of carriers that are not fully equipped. With regard to TACAIR/ASW forces, the budget request provides funds to support thirteen carrier air-wings, including fuel, maintenance, and spare parts. Also in FY 1985, the budget reflects the stockfunding of Aviation Depot Level Repairables. The objective of this funding transfer is to improve readiness through improved supply support.

Senator Andrews: I would like you to provide me with a breakdown of how this 7% increase will satisfy the shortfall in aircraft carrier and combat-ready plane readiness?

Secretary Lehman: The FY 1985 program will fund sufficient spares to deploy 13 carriers, and by 1990 all 15 carriers will be capable of deploying with 100% of their AVCAL assets. The FY 1985 budget request supports an aircraft Primary Mission Readiness level of 86% and an overall Mission Capable Rate of 70%.

Questions Submitted by Senator D'Amato

NAVY ATM COUNTER

Senator D'Amato: The Navy's carrier battle group defenses against the air breathing threat appear to be both robust and capable of orderly growth to meet the future threat. While critics doubt the possibility of employment of nuclear weapons during a war at sea without prompt escalation to a central strategic nuclear conflict, the possibility of such employment must still be considered by the Navy. Since battle group defenses greatly reduce the probability of success of an air breathing attack employing tactical nuclear weapons, once the enemy has decided to cross the nuclear threshold, the question logically arises concerning the carrier battle group's ability to avoid, survive, and, in the future, actively defend itself against an attack by the [deleted] [deleted] have missions against naval forces at sea. How does the Navy plan, both now and in the future, to deal with the threat posed by [deleted] [deleted] when carrier battle groups are operating [deleted] of these weapons?

Admiral Watkins: We have no evidence to support the thesis postulated in your question that the Soviets would employ ballistic missiles against highly maneuverable carrier battle groups (CVBG). However, our strategy to counter a potential [deleted] on naval forces at sea is many pronged. First and foremost, we take advantage of our inherent mobility and dispersion to make such a tactic very unproductive. Unfortunately, there seems to be a commonly held misconception that our CVBG's steam around in tight World War II formations covering only about 300 square miles. Today, our nominal CVBG disposition covers 56,000 square miles - an area equivilent to the entire central front of Europe. But, were the Soviets to attempt such a strategy, we are still prepared to deny them success. In this connection, we must continue to control the information war to deny the Soviets quality surveillance and targeting information critical to Ballistic Missile delivery. We feel we can do this well today. We must also continue our initiatives to reduce fleet susceptibility to nuclear weapons effects; and we must define the technologies necessary to a systems approach to counter the threat and develop those technologies.

Our strategy [deleted] [deleted] capitalizes on the inherent advantages of mobile fleet units against a ballistic missile system. [Deleted].
Our initiatives to harden the fleet against nuclear weapons effects were realized with CG 47 Class cruisers designed to withstand a (deleted) making them more survivable. The DDG 51 Class furthers this (deleted) and includes a Collective Protective System. We have redirected (deleted) to include nuclear weapons effects hardening in the design of both new and upgraded combat systems, ships and aircraft. (Deleted.)

For the future, we are reviewing the technologies required to counter the threat. (Deleted.)

(Deleted.) We are participating with the Army in the Joint Anti-Tactical Missile Study intended to define the technology direction to meet the threat and have funded the AEGIS ANTI-TACTICAL MISSILE (deleted) in POM-86.

NAVY ATM COUNTER

Senator D'Amato: Since the Soviet Union, through the process of deploying large numbers of heavy MIRV'd ICBM's, has gained such an excess of powerful, accurate warheads (deleted) has become a real threat. How does the Navy plan, both now and in the future, (deleted).

Admiral Watkins: We have no evidence to support your thesis. In fact, all studies conducted to date indicate that (deleted) to each CVBG, nominally dispersed and constantly moving over a 56,000 square mile area at sea, as to make such a (deleted). Nevertheless, our strategy to counter the (deleted) would be the same as I discussed in response to your previous question concerning the threat posed by (deleted).

JOINT ANTI-TACTICAL MISSILE PROGRAM

Senator D'Amato: What role does the Navy have in the Joint Anti-Tactical Missile Program?

Admiral Watkins: We provide representation to the Joint-Tactical Missile Study and are a member of the Study Advisory Group. This participation will bring to focus those technologies now under development with Navy programs which may be applicable to the Joint ATM Program and will assist in directing our future efforts to provide meaningful support to counter-ATM technologies.

SOVIET ABM PROGRAM

Senator D'Amato: What is the Navy's view of the current Soviet anti-ballistic missile (ABM) program?

Admiral Watkins: We believe the Soviets are (deleted) their ABM deployments at Moscow to complicate U.S. planning and (deleted) in accordance with their doctrine and strategy for nuclear war. The Moscow ABM system (deleted) thus far within ABM Treaty limits, include (deleted) a (deleted) and reduce current deficiencies in coverage. Available evidence does not indicate with any certainty whether the Soviets (deleted) 100 ABM launchers at Moscow - but it does show they (deleted) in the 1980s. If the Treaty were abrogated by either the U.S. or the USSR, we believe (deleted).

On balance, we believe there is a fairly low chance about (deleted). We believe they would see the (deleted) especially of (deleted).

WIDESPREAD ABM DEPLOYMENT

Senator D'Amato: If the Soviet Union were to embark on the deployment of a national ABM system, in violation of the ABM Treaty, what deployment options would they have and how would these options impact upon the ability of the Navy's submarine launched ballistic missile force to accomplish its strategic mission?

Admiral Watkins: The Soviets are developing the components of a widespread ABM defense system consisting of [deleted] [deleted.] Based on the level of effort the Soviets devote to ABM development in the future, we can postulate possible options for ABM deployments beyond Treaty limits which we believe are within their capability to achieve. These options range from a (d). Since the components of these systems are still in the development stage, we have not assessed force-on-force capabilities and are uncertain about the potential [deleted.] We are certain, however, that deployment of a Soviet ABM system, even if it could be overcome by an attacking force, would complicate our attack planning and create uncertainties about the potential success of a U.S. strike.

U.S. SLBM FORCE AGAINST ABM SYSTEM

Senator D'Amato: What steps would the Navy consider taking to improve ability of its SLBM force to accomplish its mission in the face of a Soviet nationwide ABM system?

Admiral Watkins: Together with the Office of the Secretary of Defense and the Air Force, we would develop a coordinated and integrated national response to a Soviet nationwide ABM system, evaluating SLBM countermeasure options in a total context with other U.S. strategic forces. The effectiveness of our penetration options would vary with the capabilities of their defense, and we should therefore not decide upon a specific solution until the nature of their defense is defined more clearly. The Department of Defense is evaluating the effectiveness of various SLBM tactics and countermeasures against different defense capabilities.

ABM DEFENSE PENETRATION

Senator D'Amato: Please discuss the relative contributions penetration aids, maneuvering reentry vehicles, and terminal guidance could make in an ABM system penetration scenario.

Admiral Watkins: Any evaluation of the relative utility of penetration options must be viewed in relation to a specific defensive system. ABM defensive systems are comprised of sensors to detect and track reentry vehicles (RV), interceptors to destroy them, and a communications and data management system to tie the two parts together. Each defensive system is made up of different components and therefore has different strengths to overcome and weaknesses to exploit.

Penetration aids are designed to confuse or jam sensors, or to overload them with threats. Maneuvering reentry vehicles (MARVs) attempt to defeat defensive systems through evasive maneuvers in the atmosphere. Penetration aids may be required with the MARV's to protect them before they enter the atmosphere. Terminal guidance is only indirectly related to ABM system penetration, since it only improves accuracy of the weapons system on which it is employed.

Another consideration in evaluating relative utility of penetration methods is their effect on payload since each option results in offloading attacking RVs. For this reason the effectiveness of a given option must be evaluated in a system context. For example, if a decoy is only 50% effective but is very light and inexpensive, it may be superior to another option that is 100% effective but results in almost all the RV's on the missile being offloaded. The effectiveness of a penetration option is both a technical and a system issue, and must be evaluated in both contexts. Each method has its own particular strengths which can be used to complement other methods as well. Further discussion of relative utility would be scenario dependent.

STRATEGIC DEFENSE INITIATIVE

Senator D'Amato: What are the Navy's views concerning the President's Strategic Defense Initiative?

Admiral Watkins: We strongly support the President's Strategic Defense Initiative (SDI). We concur with the objectives which represent a long term shift in strategic direction. The initiative embarks prudently on an orderly transformation from deterrence through retaliation toward a more stable deterrence based on defense of the United States and its Allies.

SOVIET SLBMs

Senator D'Amato: Does the Navy believe the Soviet Union could harden its current SLBM's to the point where high energy laser energy would not be able to destroy them in the boost phase? Please explain the engineering, technical, and production difficulties the Navy believes the Soviet Union would face in the process of hardening its current generation of SLBM's, and the impact of the hardening process on the military capability of the missiles themselves.

Admiral Watkins: **[Deleted]**.

CHEMICAL WARFARE

Senator D'Amato: What steps has the Navy taken to protect its shore-based personnel in Europe from the effects of a Soviet attack employing lethal chemical agents?

Admiral Watkins: We have increased the level of awareness, training and planning in Chemical Warfare Defense. Improved Chemical Biological Radiological (CBR) defense training starts in accessions programs and continues through exercises of CBR defense procedures at overseas facilities. Disaster Preparedness Plans, which include chemical defense, have been completed for four European bases. Four more Disaster Preparedness Plans are expected to be completed by July 1984.

Senator D'Amato: What stocks of chemical protective masks and clothing are available to shore-based personnel at the unit or base level?

Admiral Watkins: The stocking level of chemical protective masks and clothing varies from base to base and unit to unit as a function of unit mission and relative threat. We have chemical masks and protective clothing for about (d) percent of the active duty personnel in Europe.

Senator D'Amato: How long does the Navy believe its shore-based operations in Europe could continue to function in a chemically contaminated environment?

Admiral Watkins: The length of operations we can sustain in a chemical environment is scenario dependent. It is a function of the base being attacked, the mission being performed, the chemical agent and concentration employed, and the frequency of the re-attacks as well as the environment. In general, our shore facilties overseas have a **[deleted]** capability to sustain operations in a chemically contaminated environment which the Soviets are capable of producing. This is due to the degraded capabilities experienced when working in protective clothing and to shortfalls in CBR defensive equipment at overseas bases.

Senator D'Amato: What would the Navy's requirements be for resupply of its European shore-based units so they could sustain operations in a chemical environment?

Admiral Watkins: Our resupply requirements are scenario dependent. We are reviewing the CBR protection requirements of individual bases as a function of their mission and the relative threat in a contaminated environment. We cannot determine our requirements accurately until this survey is complete.

Senator D'Amato: How does the Navy plan to meet these resupply requirements?

Admiral Watkins: We have no unique means established to meet resupply requirements in a CBR environment. As I stated earlier, our actions would be very scenario dependent.

Senator D'Amato: What impact would a large scale Soviet chemical attack against Navy shore-based facilities in Europe have upon the Navy's ability to conduct military operations in support of a NATO conventional defense of Europe?

Admiral Watkins: Our ability to conduct military operations in support of NATO would be **[deleted]** (d). As a mobile, sea-based force, we would suffer less degradation due to the loss of European shore-based facilities than the other services. The degradation would be due in part to loss of (d). The impact of a large scale Soviet chemical attack can be reduced by improved defensive capabilities, but never eliminated. For tasks which are strenuous or require manual dexterity, the very protective equipment needed to keep personnel alive prevents them from effectively carrying out their tasks.

Senator D'Amato: How important is a credible U.S. chemical deterrent to our ability to conduct a successful conventional defense of Europe?

Admiral Watkins: A chemical retaliatory capability is essential to our ability to conduct a successful conventional defense of Europe. The capabilities we depend on to counter Soviet superiority in numbers will be negated if we are forced to fight in a one-sided chemical environment. Without a chemical capability, we are forced to rely on a threatened nuclear response to an enemy's use of chemicals. The enemy could then base their use of chemical warfare on their perception of our willingness to escalate to a nuclear response. We would have placed ourselves in the position of being able to neither deter nor control the conflict, and given the enemy a substantial tactical advantage at low risk. Such conditions are an unwanted invitation to Soviet exploitation.

Senator D'Amato: How many Navy dependents and civilian employees are presently living in Europe, including both command-sponsored and unsponsored dependents?

Admiral Watkins: As of March 3, 1984, the recorded number of dependents on station in continental Europe totaled 9,116. There is no requirement to report unsponsored dependents. So that number is unknown. As of September 30, 1983, the number of U.S. civilian employees in Europe totaled 765. Foreign national civilian employees totaled 2,446. Continental Europe estimates include the following countries: Germany, Greece, Italy, Potugal (excluding Azores), Spain and United Kingdom.

Senator D'Amato: What casualties does the Navy anticipate dependents, Department of the Navy civilian employees, and host nation employees would suffer if the Navy were unable to evacuate non-essential personnel before being subjected to a massive Soviet attack employing lethal chemical agents?

Admiral Watkins: We cannot accurately determine the number of casualties that we would suffer. Factors such as weather, distance from attack point, timing of the attack, the agents and concentrations employed, deployment means, amount of warning, and the protection offered by buildings will greatly affect the number of casualties.

Senator D'Amato: What provisions have the Navy made to provide medical care to these people if they are not evacuated and become chemical casualties?

Admiral Watkins: Current medical treatment facilities in Europe are limited to approximately 100 hospital beds located in small naval hospitals at Naples, Italy and Rota, Spain. These facilities are not hardened against a chemical attack. However, should civilian casualties occur away from these medical treatment facilities and subsequently arrive at these hospitals, protocols for the treatment of chemical casualties would be instituted, including the administation of proper antidotes, as available.

Senator D'Amato: If Navy shore-based facilities in Europe are subjected to a massive Soviet attack employing lethal chemical agents, what impact does the Navy believe such an attack would have on the surrounding civilian communities, and what effect would this impact have on the Navy's ability to accomplish its military missions at these facilities?

Admiral Watkins: The impact of such an attack is scenario dependent. Factors such as the location of the installation attacked, environmental conditions, the agents and concentrations employed, deployment means, and the protection available will affect the [deleted] casualties. Our ability to accomplisn our military mission is also scenario dependent. The most lucrative naval shore targets for chemical attack are unloading docks, points of embarkation/debarkation, ship repair facilities, air stations and other facilities which need large numbers of exposed personnel to carry out their missions. For the most part, these facilities support forces land based in Europe rather than naval forces in adjacent waters. Moreover, these facilities are distant from the battle area. The impact of Soviet chemical warfare is first upon land based forces; second, on naval units supporting forces ashore; and third, on naval forces. [Deleted].

A-6E

Senator D'Amato: I understand that the Navy is presently short of A-6E assets. While there is no long-lead money for FY '86 A-6E procurement in the FY '85 Navy budget as submitted, I understand Secretary Lehman has testified that the Navy is working on a budget amendment to request long lead funds. When can the Committee expect to receive it?

Admiral Watkins: We expect to complete our review of continued production of the A-6 in the next few months. If the FY 1986 budget includes procurement of A-6 aircraft, the $15 million included in the FY 1985 budget for shutdown costs can be used as long-lead money.

MEDIUM ATTACK AIRCRAFT

Senator D'Amato: I was briefed on the results of the Navy's Blue Ribbon Panel evaluation of the medium attack aircraft issue. While the report of the panel is classified, I wonder if you could supply an unclassified narrative describing the research and development costs, technical and cost risks, and lengths of time required to proceed with the major options, specifically addressing the A-6F and the proposed upgraded version of the F/A-18?

Admiral Watkins: The Blue Ribbon Oversight Committee concluded that a new all-weather attack aircraft incorporating advanced technologies for enhanced survivability and effectiveness is required but is not achievable in the near term. In the interim, an upgraded A-6E can provide a satisfactory, cost-effective solution to Navy medium attack mission requirements. Specific answers to the issues raised in your question require classified responses. Detailed information on these issues is contained in a classified summary of the Blue Ribbon Committee report which was provided to the Staff Director of the Senate Subcommittee on Defense by the Assistant Secretary of the Navy (Research, Engineering and Systems) on February 17, 1984.

A-6E

Senator D'Amato: Now that the Department of Defense has approved the Navy's decision to proceed with the A-6F program, I was surprised to see no major research and development line item request for money to initiate this program. Please provide the Committee with a statement of the funds required in FY 1985 for this development effort, and a statement of the cost and schedule for the full period of the development effort.

Admiral Watkins: The A-6 upgrade program is funded with $19.6 million in FY 1985. NAVAIR is currently negotiating with Grumman Aircraft for the development of the F-14D and the A-6 upgrade. A definable development for the A-6 upgrade, in terms of cost and schedule, should be available by April 30, 1984.

F/A-18

Senator D'Amato: NAVAIR was recently requested to examine the cost of upgrading the F/A-18 to a two-seat model capable of performing the Marine Corps all-weather attack mission. This upgrade was to be accomplished through an engineering change proposal at "minimum cost." Please provide the Committee with a copy of NAVAIR;s response, and explain how this version would compare in cost and capability to the upgraded version of the F/A-18 rejected by the Navy's Blue Ribbon Panel.

Admiral Watkins: The formal NAVAIR response will not be available until mid-April. The proposed all-weather attack mission upgrade incorporates radar, displays and other hardware changes to provide a beacon-bombing capability with growth potential in software for full in-weather radar bombing and tactical reconnaissance missions. The rear cockpit is designed for effective aircrew coordination. Previously proposed internal and external fuel, and wing planform changes are deleted from this version, resulting in an expected development cost of less than half that presented to the Blue Ribbon Panel.

JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)- NAVY

Senator D'Amato: Last year, I had the impression that the difficulty involving the Navy's JTIDS program and the Air Force's Enhanced JTIDS (EJS), had been resolved with the adoption of a compatible wave form and with certain frequency allocation decisions. Now, I am troubled to read reports that this problem has flared into life again. What position is the Navy advocating in its discussions with the Department of Defense regarding this matter?

Admiral Watkins: We fully support the Secretary of Defense Decision Memorandum (SDDM) on the Anti-Jam Communications Program: DSARC-level Program Review of May 9, 1983. The SDDM directs that the Air Force EJS incorporate a waveform compatible with JTIDS DTDMA waveform used by the Navy.

Senator D'Amato: Does the Navy desire any modifications to the decisions reached last year in the JTIDS-EJS matter?

Admiral Watkins: No, we are fully satisfied with the direction provided by the Secretary of Defense Decision Memorandum (SDDM) on the Anti-Jam Communications Program: DSARC-level Program Review of May 9, 1983.

RELOCATABLE OVER-THE-HORIZON RADAR (R-OTH-R)

Senator D'Amato: The Navy appears to have an effort underway in Over-the-Horizon Backscatter Radar to support fleet air defense. Please describe the nature, scope, and purpose of this effort.

Admiral Watkins: We are developing a Relocatable Over-the-Horizon Radar (R-OTH-R) to support requirements for a wide area active surveillance system to detect both ships and aircraft beyond the coverage horizon of current fleet surveillance capabilities. It is a land based radar which will be deployed to various sites to support Navy operations in the areas of highest importance to our maritime strategy. The relocatable design will provide flexibility as threat patterns and capabilities change in the future. The system has the potential to support NATO and other allied surveillance requirements. Ship and aircraft tracks produced by the R-OTH-R will be correlated at the appropriate Ocean System Surveillance Information System (OSIS) node with information from other wide area sensors and disseminated in a timely manner to tactical users.

QUESTIONS SUBMITTED BY SENATOR STENNIS

Navy Personnel Increase/Recruiting and Retention

Senator Stennis: Mr. Secretary, the Fiscal Year 1985 budget request includes an increase of 10,500 in the Navy end strength. I know that the Navy is expanding the Fleet to 600 ships, but I understand that most of these new ships do not require as many personnel to man them because of their modernization. Could you tell me how these additional 10,500 people will be utilized?

Secretary Lehman: It is true that modernization of the fleet is leading to more efficient, economical use of manpower.

The FY 1985, 10,500 end strength increase is based upon the manning requirements of present and future ships and squadrons as well as of the support necessary for their operations.

Defense Planning and Programming Categories	MPN	%
TACTICAL/MOBILITY (squadrons, ships, Aircraft Intermediate Maintenance Departments, Shore Intermediate Maintenance Activities, etc.)	+6,626	63.1%
SUPPORT (Naval Air Stations, Naval Stations, medical, etc.)	+3,683	35.1%
AUXILIARY (Intelligence, communications, etc.)	+532	5.1%
STRATEGIC (SSBN's, support ships, etc.)	+180	1.7%
INDIVIDUALS ACCOUNT (Transients, prisoners, patients, students, etc.)	-512	-4.9%
TOTAL	+10,500	100%

Senator Stennis: The Services have done extremely well in recruiting and retention over the past several years. As the economy appears to be improving, what impact do you believe this will have on your efforts to recruit the additional personnel you have requested?

Secretary Lehman: Given requested resources, it is expected that Navy recruiters can meet the Navy's FY 1985 manpower requirements. However, signs of more difficult recruiting conditions are appearing. The youth labor pool is decreasing. The unemployment rate is declining. Military pay is not keeping pace with wage grwoth in the private sector. Youth awareness of Navy programs has dropped and competition from the civilian sector for recruits with appropriate education levels and training potential is increasing. Because of these early warning signals, all confirming development of a more competitive manpower market, we cannot reduce recruiting and advertising budgets because of success in prior years in meeting accession goals. FY 84/85 recruiting assets were predicted on a continuing poor economy with an unemployment rate of 10%. Now that the economy has taken a turn for the better (7.8% unemployment, down from 10.8%), recruiting resources must increase accordingly. If Navy recruiters are fully funded by the requested amount, I am fully confident we will meet recruiting requirements for 1985.

DDG-51

Senator Stennis: The Fiscal Year 1985 Shipbuilding Program includes funds for the lead ship of the Arleigh Burke class guided missile destroyer, the DDG-51. This ship has been on the drawing board for some time and is designed to be the destroyer of the future. Please describe the capabilities of this destroyer as currently designed and its importance to the Navy?

Admiral Watkins: The DDG-51 is a multi-mission destroyer designed to operate with Amphibious Task Forces, Surface Action

Groups, and Underway Replenishment Groups as well as Carrier Battle Groups. These ships will balance warfighting capability and affordability and are fully effective across all warfare areas; AAW, ASW, ASUW and Strike. The DDG-51 AEGIS Combat System, down-sized from CG 47 to meet destroyer requirements, provides quantum improvements over older guided missile destroyers in detection, range, reaction time, firepower, availability and area coverage. The ship's Anti-submarine Warfare system includes two advanced sensors, the AN/SQS-53C hull-mounted sonar and AN/SQR-19 Towed Array Sonar, which represent the very best available in active and passive acoustic sensors. The flight deck is equipped for LAMPS MK-III helicopters and LAMPS MK-III shipboard electronics will be installed on the ship. Strike Warfare capability, including TOMAHAWK and HARPOON missiles, is a major feature of DDG-51's offensive warfighting ability. These have never before been designed into a destroyer. These missiles, with the SEAFIRE Gun Fire Control systems and laser guided projectiles, give DDG-51 a formidable strike capability. These elements ensure high firepower and fast reaction time to meet the projected threat in the 1990's and beyond. The DDG-51's hull is a new design, with survivability and seakeeping greatly improved over any previous destroyer. With a greater beam-to-length ratio than DD-963's, more room is provided within the hull for vital combat system equipment and protected control centers. Steel is used throughout the hull and in all vital superstructure areas, providing fragmentation protection and increased resistance to blast overpressure and fire damage. Electromagnetic pulse protection is designed into major electronics equipment.

The DDG-51 class destroyer is our highest priority surface ship program and is urgently needed to replace the DDG-2 and DDG-37 class ships which are approaching block obsolescence in the late 1980's.

Senator Stennis: What are the major weapons systems that will be included on this ship?

Admiral Watkins: The DDG-51 class destroyer will have weapons systems that will perform in all warfare areas; AAW, ASW, ASUW and Strike. The DDG-51's AEGIS Combat System has been down-sized to meet destroyer requirements. The AEGIS/SPY-1D Phased Array Radar is the core of the AAW Weapon System, providing quantum improvements over older guided missile destroyers in detection, range, reaction time, firepower, availability and area coverage. The radar provides mid-course guidance to vertically launched Standard Surface-to-Air missiles, and fire control quality data to the 5"/54 gun. The ship's AAW suite also includes two PHALANX Close-In Weapon Systems to engage short range penetrators and sea skimmers. These elements ensure high firepower and fast reaction time to meet the projected threat in the 1990's and beyond. The ship's Anti-submarine Warfare system includes two advanced sensors, the AN/SQS-53C hull-mounted sonar and AN/SQR-19 Towed Array Sonar for long range detection and classification. These equipments represent the very best available in active and passive acoustic sensors. The ASW weapons are vertically launched extended range anti-submarine rockets (ASROC) and torpedoes launched from the two deck mounted MK-32 torpedo tube groups. The flight deck is equipped for LAMPS MK-III helicopters and LAMPS MK-III shipboard electronics will be installed on the ship. Strike Warfare capability, including TOMAHAWK and HARPOON missiles, is a major feature of DDG-51's offensive warfighting ability. These have never before been designed into a destroyer. Vertically launched TOMAHAWK cruise missiles can be fired with great accuracy at long range against both land targets and ships. The ship will also carry HARPOON missiles for anti-surface operations. These missiles, with the SEAFIRE Gun Fire Control systems and laser guided projectiles, give DDG-51 a formidable strike capability.

Senator Stennis: When do you plan the construction contract award for the lead ship?

Admiral Watkins: The lead ship contract will be awarded in December 1984.

Senator Stennis: Do you continue to believe that this class destroyer is capable of operating in multi-threat environments which include air, surface, and subsurface threats?

Admiral Watkins: Yes. The DDG-51 is a fast, tough ship, highly survivable at sea and has great depth and flexibility in warfighting capability. She complements the AAW capability of the CG 47 and the ASW capability of the DD 963, while her cruise missile suite supplements the surface and land attack capability of CV strike aircraft. The AEGIS System provides area defense in a high density, high threat, anti-ship missile environment. I predict this ship will more than counter the threats of the 1990's.

LHD-1

Senator Stennis: It has been the thought of many over the past several years, including myself, that we must pursue the Vertical Short Take-Off and Landing (VSTOL) aircraft and other approaches to getting aviation at sea aboard smaller ships. Funds were included in the Fiscal Year 1984 Defense Appropriation Act for the lead ship of the LHD-1 class, the new marine amphibious assault ship. Would you describe the additional capabilities that the helicopters and VSTOL aircraft provide to this ship on assault operations?

Admiral Watkins: The LHD-1 is designed to operate the CH-53E heavy lift helicopter and the AV-8B VSTOL aircraft as well as other existing helicopters in the Navy and Marine Corps inventories. It will also be able to operate the future JVX medium lift tilt rotor aircraft. The CH-53E is the only helicopter capable of lifting the M-198 howitzer and the light armored vehicle (LAV) which are required to provide the firepower and mobility for the heliborne assault. The AV-8B will meet the Marine Corps' requirement for a light attack aircraft capable of providing flexible, accurate and responsive close air support during amphibious assault and ground combat operations. In the future, the JVX aircraft with a 250 knot cruise speed will provide a new capability to rapidly move troops and other equipment inland during the assault. These capabilities coupled with the speed and mobility of the Landing

Craft Air Cushion (LCAC) add a new over the horizon dimension to amphibious assault in the 1990's. The speed of the assault, the ability to launch from 25-50nm at sea, and the ability to land over a much wider range of beaches will increase the element of tactical surprise and enemy confusion. Additionally, LHD-1's ability to operate VSTOL will provide the option of carrying organic fixed wing aircraft for tactical support during the assault. The versatility of the LHD-1 with its embarked aircraft and LCAC's will provide an invaluable addition to assault operations in the 1990's.

Senator Stennis: Is there any current Navy plan to further enhance the additional light carrier capability beyond that contained in the LHD-1 ship?

Admiral Watkins: We have no such plans. We have seriously examined alternatives to determine what size, type and configuration of ship would provide the best basing for present and future aircraft at sea and what the total capacity of the basing structure should be. We placed emphasis on warfighting capability, operational suitability, life cycle costs, survivability, and sustainability in our evaluation. The conclusion drawn from these efforts is that the large deck nuclear powered aircraft carrier is the most efficient and effective platform for basing current and future tactical aircraft at sea. Although a similar number of aircraft could be distributed on a larger number of smaller ships, the cost would be greater, the overall effectiveness would be less, the ships would be individually less survivable and an already complicated logistics problem would be compounded.

MILITARY SUPERIORITY

Senator Stennis: Admiral Watkins, on May 19, 1982, during hearings before the Senate Armed Services Committee on the FY 1983 Defense Authorization Bill, I questioned you regarding U.S. military power. There was no doubt in your mind at this time that you would not for one instant trade U.S. military forces--you referred to them as the American "blue chips of superiority"--today for those of the Russians, or anybody else.

There was no doubt in your mind when in response to the question, "What are the Russians afraid of?", you said, and I quote: "Our superior tactical air at sea is number one . . . . Our superior SSN submarines are better--probably 5 to 8 years in technology . . . . We have a superior cruise missile which the Soviets cannot match . . . . Weapons systems individually in my judgment, are superior to the individual weapons systems in Soviet combatants."

Now, almost two years later, Admiral Watkins, I would like to know if your response would be any different to the same question--What are the Russians afraid of with regard to the United States Navy?

Admiral Watkins: There are at least five areas in our Navy that are significantly superior to the Soviet Union and the Soviets know it. These are the nuclear attack submarines, the entire anti-submarine warfare capability of the United States Navy, the Navy-Marine Corps team, tactical air at sea, and the TRIDENT submarine. The TRIDENT will continue its superiority with the D-5 SLBM. These programs are emphasized in our FY 1985 budget submission to maintain our lead in these areas and offset the Soviet advantage in other areas. We also have a commanding lead in selected technology areas.

Senator Stennis: General Kelley, would you please comment on the same question with regard to the United States Marine Corps?

General Kelley: One area of naval warfare in which this Nation possesses a decided advantage vis-a-vis the Soviet Union is the power projection capabilities of our amphibious forces supported by carrier battle and surface action groups. The DON's mid-term objective ship construction program will increase our ability to get to any crises, and the Maritime Pre-positioning Ships (MPS) concept provides a significant new dimension in mobility, sustainability, and global response that works in concert with our amphibious capability. This aggregate force in readiness serves as a formidable deterrent to capricious Soviet aggressive acts.

SEALIFT

Senator Stennis: The active merchant fleet is declining rapidly. Do you perceive that we currently have a critical shortage of militarily useful product tankers that could be diverted to national security sealift requirements?

Admiral Watkins: We are conducting a study to assess whether the worldwide POL distribution system will meet our needs for POL requirements in both peace and war. Although the numbers of militarily-suitable product tankers in the U.S. flag fleet is declining, there has not been a similar decrease in the delivery capacity. Economic factors are causing changes in the worldwide POL distribution and the less economic small product tankers are giving way to larger, more cost effective tankers. Thus, while the ships are fewer in number, their individual and combined capacity is greater. DOD depends on the worldwide POL distribution system to meet POL requirements in both peace and war. To evaluate our future capability, we have extended the DOD Sealift Study to initiate an assessment of our ability to meet national defense requirements in 1988.

QUESTIONS SUBMITTED BY SENATOR INOUYE

A-6E

Senator Inouye: Regarding the A-6E program, my information is that you are currently short of A-6E assets. In addition I understand that your recent force level studies show that you want to increase medium all weather attack (A-6E) force levels of further carrier deployments. Yet I notice there is no long lead-time money in the FY 85 budget for continued production of the A-6E. Don't you need money in the FY 85 budget for continued production, and if so, how many $s for how many units?

Secretary Lehman: Continued production of the A-6 is presently under review within the Navy. If the FY 1986 budget includes procurement of A-6 aircraft, the $15 million included in the FY 1985 budget for shutdown costs can be used as long lead-time money.

Senator Inouye: Secretary Lehman, you have stated that you want to proceed with an up-grade of both the engine and avionics of the A-6E, yet there is no major R&D line item request for money to initiate this program. How much money do you require in FY 85 to initiate this program and how do you anticipate funding this program?

Secretary Lehman: To meet our objective of introducing the modification and improvements to the A-6E for an FY 1988 production decision we require $120 million in RDT&E in FY 1985. The President's budget request for $19.6 million was formulated and approved prior to the formalization of the detailed acquisition plan which draws on the commonality of development with the F-14 upgrade. Therefore we will identify programs to you prior to your mark up from which the additional $100 million can be taken in order to meet the higher priority of the A-6E upgrade.

All-Weather F/A-18

Senator Inouye: I understand that the Navy conducted a study as to the trade-offs of updating the A-6E versus the possibility of a modification to the F/A-18 in an attempt to make an all weather medium attack aircraft out of that system. I would like to know the results of that study as to the "ball park" requirements in time and R&D money required for the A-6 versus the A-18?

Secretary Lehman: The Blue Ribbon Oversight Committee strike aircraft studied the Navy's options for modernizing the all-weather medium attack force. Based on the designs submitted by the contractors (A-6F, A-18A), a NAVAIR estimate of RDT&E costs leading to a production decision in FY 1988 are as follows: (1) for the A-6F, $730.0M; (2) for the A-18A, $715.0M. Since that study, the Navy has proposed a contract option to Grumman which would, if accepted, accommodate the A-6E upgrade within $500 million. I feel confident that we will bring Grumman in on a fixed price contract with a ceiling not to exceed $500 million and obtain all the needed improvements that our operational forces need to fulfill their all weather strike missions.

QUESTIONS SUBMITTED BY SENATOR JOHNSTON

SEALIFT

Senator Johnston: There has been testimony before this Committee that, even with the completion of current airlift and sealift expansion programs, there will still be a substantial shortfall in lift capability for a number of wartime scenarios. Is it possible that the civilian maritime fleet could be of use in bolstering Defense support requirements?

Admiral Watkins: A recently completed DOD Sealift Study quantified our joint services sealift requirements. The dry cargo fleet programmed to be under government control and projected to be available from the U.S. commercial fleet in 1988 included 4.2 million DWT of surge and 3.3 million DWT of sustaining shipping. Although a fleet of this size is nine percent short of our surge requirements, the Defense Resources Board (DRB) judged the identified shortfall to be within acceptable limits of risk and that the program was properly balanced with other mobility elements. As demonstrated in this study, DOD counts on all militarily suitable dry cargo shipping in the U.S. commercial fleet to meet defense requirements in time of war.

Senator Johnston: Is there any alternative for additional lift capability but to rely on the privately owned U.S. flag merchant fleet?

Admiral Watkins: The alternative to U.S. flag merchant fleet for lift capability is the Ready Reserve Fleet (RRF) which we established in the mid-seventies in response to the declining U.S. flag fleet. The RRF was originally limited to a small number of ships and is now programmed to expand to 61 dry cargo ships by FY 1988. As the U.S. merchant marine continues to decline, we will continue to expand the RRF to meet national defense requirements.

Senator Johnston: If U.S. flag assets are diverted to military use, wouldn't this have an adverse effect on import levels of strategic and critical materials which are an important part of the U.S. defense industrial base?

Admiral Watkins: In peacetime, it would have a minimal effect since less than five percent of U.S. trade is carried in U.S. flag shipping. In wartime, however, the recently completed DOD Sealift Study required the use of every militarily-suitable U.S. flag ship to meet the lift requirements. This would leave essentially no U.S. flag shipping available to meet wartime requirements for the economic security of this country and we would have to rely on foreign flag shipping to import strategic and critical materials. Such reliance on foreign flag shipping in time of war carries with it an obvious element of risk.

Senator Johnston: I understand there are ongoing joint Navy/Maritime Administration studies on sealift and the shipyard mobilization base. What is the status of these studies, and when can we expect their findings?

Admiral Watkins: The DOD Sealift Study addressing dry cargo sealift requirements has been completed recently and is in printing for distribution. A follow on effort addressing POL sealift requirements is in progress and is expected to be completed in May 1984. A second study, entitled Shipyard Mobilization Base (SYMBA) Study has also been completed and is soon to be published. This second study will be extended to examine a projection of reduced shipyard capacity for 1988. This extension should be completed in May 1984. We propose to initiate a third study shortly on the adequacy of civilian seafaring manpower to meet our projected requirements in peace and war. The Navy and the Maritime Administration are full participants in all these studies.

PBX EXPLOSIVES

Senator Johnston: I understand the Navy is testing the use of PBX explosives in Navy General Purpose (GP) bombs as a replacement to H-6, as PBX is less sensitive to shock and more thermally stable, which results in greater shipboard safety. Can you tell me when the Navy will start procuring the GP bombs loaded with PBX?

Admiral Watkins: Contingent upon qualification results, procurement could start in Fiscal Year 1986. We are preparing to conduct full scale safety, environmental, effectiveness, and sympathetic testing of the MK-83 PBXW-109 weapon to qualify it for naval use. We plan to complete qualification testing in October 1984.

Senator Johnston: When will you provide the Single Manager for Conventional Ammunition (SMCA) the technical specifications and quantity required so that the SMCA can design and provide the facilities for Load, Assemble, and Pack (LAP)?

Admiral Watkins: We expect to be able to provide technical data and quantity requirements to the Single Manager for Conventional Ammunition (SMCA) by the first quarter of FY 1985. It would be premature to provide SMCA the technical specifications or procurement requirement prior to successful qualification of PBXW-108 in the MK-80 series bomb, which is scheduled to be completed in October 1984.

PBX/McAlester AAP

Senator Johnston: Why hasn't the Army accepted the "A" line at McAlester AAP? Would the Army accept the "A" line from the Navy for PBX bomb loading if the Navy transferred $15M for renovation/repair of the "A" line to the Army?

Admiral Watkins: The Army has not accepted the "A" line at McAlester AAP because the 1978 Army-Navy agreement called for us to complete the facility prior to transfer. In 1983 Army informed us that changes to mobilization plans had eliminated the requirement for a conventional bomb facility at McAlester.

There have only been preliminary Army-Navy discussions concerning Army acceptance of the "A" line for PBX bomb use. There has been no specific discussion regarding the terms of transfer. Therefore, I am unable to comment on the Army position.

QUESTIONS SUBMITTED BY SENATOR DECONCINI

AIRCRAFT PROCUREMENT

Senator DeConcini: In view of the interest within the Navy to increase competition, do you intend to compete the procurement of the twelve (12) aircraft you are requesting as replacements for your aging C-131's and C-118's?

Admiral Watkins: A decision to compete the fiscal year 1985 portion of the C-12 program is under review. Because of favorable market conditions, the potential exists for a competitive procurement. We are evaluating that potential. No decision will be made until we have evaluated carefully all the factors involved, including performance, cost, delivery schedules and logistics considerations. For the record, the twelve aircraft requested in FY 1985 are designated replacements for a mix of obsolete U-11, C-1A, and ES-2D aircraft that must be retired.

Senator DeConcini: The USAF has recently completed a selection of aircraft to replace their aging T-39's (the OSA program) and it selected a mix of 2/3 FANJETS and 1/3 TURBOPROPS to meet their total requirement. As the Navy has already procured approximately sixty-six (66) percent TURBOPROPS, is there not some merit in considering a mix at this point? Do you intend to provide in the competitive process the opportunity to select aircraft of varying productivity with the thought of a mix resulting which would be composed of the approximately sixty-six (66) TURBOPROPS you have already procured and an appropriate number of the more productive FANJETS?

Admiral Watkins: We could not support a similar mix as the Air Force. The Navy inventory of OSA aircraft includes a mix of twenty-three CT-39/T-39 jet aircraft which are judiciously sited and scheduled for the highest priority, time sensitive missions. Appropriate replacements will be considered when these aircraft reach their program service life.

SUBCOMMITTEE RECESS

Senator RUDMAN. On behalf of the committee, thank you very much for your testimony this morning. The subcommittee will stand in recess until call of the chairman.

[Whereupon, at 12:05 p.m., Tuesday, March 6, the subcommittee was recessed, to reconvene at the call of the Chair.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1985

TUESDAY, MARCH 13, 1984

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10:03 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Warren Rudman presiding.

Present: Senators Stevens, Rudman, and Andrews.

DEPARTMENT OF DEFENSE

UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

STATEMENT OF HON. DR. RICHARD D. DE LAUER, UNDER SECRETARY OF DEFENSE FOR RESEARCH FOR AND ENGINEERING

OVERVIEW OF RESEARCH, DEVELOPMENT, AND ACQUISITION ACTIVITIES

OPENING STATEMENT OF SENATOR RUDMAN

Senator RUDMAN. The subcommittee will be in order.

The chairman is otherwise occupied right now, but he will be along to conduct the hearing in main, but I will start in his absence at his request.

This morning is the time scheduled to conduct an overview of the Department's research, development, and acquisition activities for fiscal year 1985. These combined areas now comprise 46 percent of the Department's budget before this committee.

BUDGET REQUEST

The $141.6 billion requested is up more than 25 percent from last year, nearly 20 percent real growth. This equates to a $7.2 billion increase in R&D and a $21.6 billion increase in procurement. Not just the growth, but the out-year commitments, make this an area the committee must scrutinize.

HEARING PROCEDURE

Today's hearing is focused on three general topics: research and development program, joint procurement programs, and acquisition policy. We are scheduled to conduct a hearing Thursday on spare parts and acquisition management in general. We have also sched-

31-680 O—84——35

uled hearings on each of the services major modernization requests to complete our review of this budget initiative.

Before starting, I would like to note that in the past we have occasionally found it necessary to close the hearing to cover classified material. We hope this will not be necessary this morning, and the chairman will in all probability move to close the hearing only if discussion of classified subjects is unavoidable.

INTRODUCTION OF DR. DE LAUER

Today we are pleased to hear the testimony of Dr. Richard De Lauer, Under Secretary of Defense for Research and Engineering. I welcome you to the hearing this morning for your third annual report. It is always a pleasure to have you before the committee.

For the record, I would like the Department to insert a comparative summary of both the research, development, test, and evaluation appropriations and the procurement budget authority and the associated outlays similar to those in the back of your statement, Dr. De Lauer, for total obligational authority.

We will place your full statement in the record and welcome any additional comments and summary of your formal statement, after which we will have a few questions, I am sure.

STATEMENT OF SENATOR ANDREWS

Dr. **De Lauer**. Thank you, Mr. Chairman.

Senator **Rudman**. I think my colleague Senator Andrews would like me to yield for a moment.

Senator **Andrews**. Dr. De Lauer, I would stay, except I have to chair a Transportation Subcommittee hearing. Senator Rudman and myself have been participating in a number of hearings, as you know. We have been at breakfast in the Pentagon a couple or three times, and we have talked to the various Assistant Secretaries of the Air Force, of the Army, and of the Navy on the warranty provisions we put through.

Almost invariably, these individuals, particularly the Navy people, who Senator Rudman, Senator Stevens, and I had breakfast with the other day, tell us that they think this is workable, tell us that it has saved money. As a matter of fact, the Secretary of the Navy as I recall said it saved a good deal of money in a Harrier contract they got into, and they welcome it.

They go on to say, doctor, that when they were first sent a memo from other people in the Pentagon they were very worried about the complexity of it. But when their own people analyzed it, they see that it is very workable and is something that can help.

WARRANTIES

The question—and it is one question, because I am imposing on the committee's time; I have to leave—you are not hatching up some type of, shall we say, activity in order to put in the Federal Register such a complex interpretation of this warranty that you then go to the contractors and the group in the Pentagon who do not really want to have a warranty, to put it mildly, and then come up to us and say it is unworkable?

Senator **Rudman**. Put another way, Dr. De Lauer, are you going to try to kill it with kindness?

Dr. **De Lauer**. No.

Senator **Andrews**. Are you going to try to kill it with complexity? And to follow through on that, will you show the subcommittee and its staff your interpretation of it before it is published and what you are going to demand?

Dr. **De Lauer**. Senator, this will be a continuing dialog between you and me.

Senator **Andrews**. And Cap and a whole bunch of others.

MODIFICATION TO WARRANTY REQUIREMENTS

Dr. **De Lauer**. Let me reiterate for the record that the Department is on the path to provide warranties in all our contracts. What we have argued, we hope successfully, with 794 is that it tends to be restrictive and lacks the flexibility we would like to have, and for that reason, we are in the process of suggesting possible modifications to the language. That is in work right now.

Let me answer your question specifically. The Navy has interpreted 794 in such a way that no instructions have to be issued to the services for implementation of 794. That is not the same interpretation that the other two services and the Department have taken.

This is essentially the legal interpretation of what section 794 asks, but particularly in the area of guarantees on performance.

Senator **Andrews**. But in the case of Secretary Orr, the Air Force, he testified when he was sitting in the very chair you are, doctor, that it would work well, they reviewed it and it will work well.

Dr. **De Lauer**. He also testified that the existing engine guarantee would not comply with 794 because of 794's requirement to have the contractor bear all costs of essential remedy.

We have in that particular guarantee—for the purposes of economy, since we have to have maintenance people to maintain the engines anyway—said that some of the work will be done by the Government in the case of defective material and defective workmanship. And that is the rigidity of 794 that we would like to be able——

Senator **Andrews**. 794 does not preclude maintenance work being done by the Government, any more than you get a Chevrolet automobile out in Wyoming with a water pump broken, you can go into a service station, fix it, and it is applied back.

Dr. **De Lauer**. I am talking about the warranty provisions. The warranty provision on the bearing of the cost of remedy in 794 is explicit by saying it will be borne by the contractor.

Senator **Andrews**. Well, doctor, the reason for bringing this up is very simple. Some of us have a deep-seated suspicion, if not belief, that those of you who are dead set against the application of warranties, the rigid application of warranties, because we are proposing to do something that you want to do on a selective basis and we do not think you can protect the taxpayer by doing it on a selective basis, might lead you to interpret it in such a complex and mishmash way that it falls of its own weight.

That is why it would help very much if you would submit to the subcommittee before you put into force your interpretation of the warranty, so that we can review it and find out if there is a tendency on your part, in applying a rather simple but straightforward law to something as basic as warranties. If you could provide that to the subcommittee.

Dr. **De Lauer**. We will provide that to the subcommittee. The policy guidance will be going out today. Since it has to be implemented tomorrow, that is the date. And I have here both what the Department and the OSD level, feel in regard to what the Secretary of the Navy has put forth.

Senator **Andrews**. So you are ready to provide them to the committee today?

Dr. **De Lauer**. Well, I want to be sure that Deputy Secretary Taft has reviewed this and is ready to sign it and have it as the Department position.

Senator **Andrews**. And we have your assurance that you are not making it unnecessarily complicated and complex?

Dr. **De Lauer**. Well, that is a matter of judgment. One person's unnecessary complexity is another person's way to comply with the law.

Senator **Andrews**. There is a vast difference of opinion with our own lawyers and the Pentagon.

Dr. **De Lauer**. And between various lawyers in some of these committees.

Senator **Andrews**. Fine.

Senator **Rudman**. If there is no objection, I will ask the stenographer to insert the question, the answer and the dialog following Dr. De Lauer's presentation.

Senator **Andrews**. Fine.

Senator **Rudman**. My colleague has a full schedule. I am sure you did not mind answering that out of order.

Dr. **De Lauer**. Thank you, Mr. Chairman.

RD&A BUDGET

As you indicated, my statement can be made a part of the record, so I will just summarize it now and talk to some of the points you raised.

It is indeed true that the research, development and acquisition budget for 1985 is $142 billion and it is up over 1984. I might comment at this time, that is partially as a consequence of the fact that our budget request for 1984, when finally enacted by the Congress, was at a somewhat lower figure than what we proposed.

As you know, with a reasonably constant personnel commitment, most of the cuts have to come out of the acquisition, research, and development portion of the budget. So while the overall budget is up some 13 percent, RDT&E and procurement are up higher because of the 1984 reduction by congressional action.

We think that we have a coherent program. It is a program that has been reasonably stable as far as elements are concerned over the last 4 years. It is the fourth one that we have submitted to the Congress.

We have developed it in a very comprehensive way. We have addressed all of the elements of the Department's mission, including command, control, communications, and intelligence systems.

FORCE MODERNIZATION

We are following up on the modernization of our forces, which in light of the Soviet and Warsaw Pact buildup for 20 years, declined during the 1970's relative to them. The need for modernization was absolutely clear when the administration took office and this budget is essentially one needed to continue on the road to improvement.

We have to invest in long-term strength, strength that lies within our defense mobilization base, and particularly for strength in our science and technology base. This budget provides resources for both of those objectives.

We are at a place now where our technology can indeed be more effectively phased into the deployment of our modern systems. This budget makes a first step, a long step in regard to strengthening particularly our tactical and conventional forces.

CONVENTIONAL FORCES

Our first 3 years of the program were focused on the strategic forces and now we are starting to redirect resource allocations into the conventional force area, which matches pretty much some of the technology that now is becoming mature enough to be implemented in the force modernization picture.

Now, underlying our acquisition programs are the basic programs that include: looking at the mission consistent with long-established national security policy; enduring commitment to collective security and improved joint operations in concert with our allies; and a structured balance among force expansion, readiness, sustainability and modernization.

As you know, there is no free lunch. The resources have to be applied to either force structure, modernization, or to sustainability and operations. Those are the only three places that the money can go. If one is starved, then we really do not have a balanced program.

We are trying to very carefully balance the capabilities between nuclear and conventional, and at the same time provide a strong industrial base and rely on the free enterprise economy to provide us our products. Investment in our technology base which is included in this budget is a protection of our technology in such a way as to be able to share it with our allies and provide long-term security to both.

NUCLEAR FORCES

Let me talk first about the nuclear forces. The foundation of our strategy up to this point has been built on the question of deterring aggression. This is the policy of deterrence, and that is the reason we come before this committee and the other committees to ask Congress for our modernization program.

We have covered that in the last couple of years. It is well on its way, and this budget continues that commitment to upgrading of the command, control and communications, upgrading and modernizing the existing bomber force, providing adequate resources for fielding an upgraded capability in land-based missile systems, as well as in the D-5 program for upgraded sea-based ballistic missile capability. That program is well along and we urge you to continue to support it, as you have in the past.

The area that this budget starts taking a step in the direction of is that of our conventional forces, and I will talk further about that.

One additional item on our strategic posture is, for the first time we have highlighted the program that represents the President's initiative on the strategic defense initiative. We have in the budget about $2 billion, including a sum for the Department of Energy, for the strategic defense initiative, and I would be willing to answer questions on that later.

As you know, arms reductions are an integral part of our strategic and nonstrategic nuclear modernization efforts. At the present time the Soviets are not carrying on any discussions. On the other hand, we are making some overtures and establishing back-channel dialog with them to be able to get to the table as soon as possible.

EMERGING TECHNOLOGIES FOR CONVENTIONAL FORCES

The area that I would like to now devote a few minutes to is one of emerging technologies for conventional forces. We are now in a position to be able to deliver weapons within 3 meters, deliver them on platforms that are invisible to electromagnetic radiation, and to deliver to targets that are remotely sensed, yet battle managed in a way that is nearly real time.

These are technologies that are now available to us, and the problem is to provide enough resources so that we can start putting them into the force structure. That is essentially the emerging technologies initiative we have, which the Secretary has put forth and which he has offered to share with the allies.

This budget has reasonable amounts of money in it for these particular emerging technologies, in microelectronics, machine intelligence, in computer and software technologies, and in micro optics sensing technologies.

We urge you to act favorably on these initiatives, because it is really the only way that the United States and its allies are going to be able to overtake the Soviets' superiority in numbers by performance. This is the way we are going to have to do it.

We are cooperating with our allies in this endeavor, and I will be going to Europe next week for the four-power armament directors meeting, where this whole question of emerging technologies and how the Europeans are going to share in that, and what investments are they going to make in that area to help support our goals of providing a conventional deterrent within Europe.

CONTROL OF TECHNOLOGY TRANSFER

One of the issues involved in that is the control of technology transfer. Our program is in three categories: one, to share the technology with our allies, but to insist that they focus on industrial security, since espionage is a tool of the Soviets in regard to obtaining western technology. that is, primarily by increasing the focus on industrial security, that will permit us to close down some avenues which at the present time have been very profitable to the Soviets.

STRENGTHENING COCOM

The second is to focus on strenthening COCOM, which is an international agency designed to help control technology transfer. In both areas we are making reasonable amounts of progress, and I think that this next year we will find that there will have been great steps at improvements in both of those areas that will help us on the question of technology being leaked out of the West.

SCIENCE AND TECHNOLOGY BASE

Our science and technology base is one that I again urge you to seriously consider in our budget, because it is the one area that in the past decade has taken a very hard licking in regard to the amount of resources put into it. It is also the one area that provides our interface with the university community.

It is our 6.1 and 6.2 level money that is the basis for us to interact with the universities and to provide the necessary support to them so that they can continue to work on the basic research necessary to develop the capability for upgrading our forces.

EXCESS OF CAPACITY

The third part has to do with the fact that we do have an excess of capacity, but if the present economic recovery continues there will come a time in the very near future where the whole question of industrial capacity will have to be faced again.

MANUFACTURING TECHNOLOGY

Part of this investment that I have in this budget is for the purposes of focusing on manufacturing technology, and on the surge capability that will help provide us the insurance necessary to handle the requirements, if indeed the industrial base tends to get to the point where, on the civilian side, on the nonmilitary side, the capacity gets to be limited.

As you know, we are about 9 percent of the manufacturing GNP in the Defense Department, and we are about, if you take the full electronic capability, about 3 to 3.5 percent of the electronics GNP. On the other hand, in both of the cases, we are a major user of the very front-end cutting edge of both our manufacturing capability as well as our electronics capability.

ACCELERATE ACQUISITION PROCESS

We have taken a variety of initiatives to accelerate the acquisition process. If there is one thing that can save us the most amount of money in the Defense Department, it is getting the equipment developed, manufactured and in the hands of the troops in the shortest period of time. We have been focusing on that problem and we have tried to take some initiatives to be able to make it happen.

The primary prerequisite to such a mission is program stability. This is where I feel that the Congress can give us the greatest amount of help. We hope you will also accept the recognition of the fact that program stability is probably the biggest efficiency item that we can possibly do together, to keep the programs on a steady keel and not have the build-up/build-down problem we face, and permit us to have economic production rates.

MULTIYEAR PROCUREMENTS

And as you know, multiyear procurements is one of our initiatives. It is in the appropriations area that we have had the most problems in getting approval for multiyear procurement.

Let me furnish up, Mr. Chairman, and let you get at some questions. I will conclude, really, in reiterating the need. I think most of the committee has had the latest intelligence briefing in regard to the character of the Soviet force buildup and their investments.

SOVIET FORCE BUILDUP

There has been some question with regard to the rate of increase in Soviet defense spending. Whether it is 3 or 4 percent is relatively unimportant What is significant is that their increases are being applied to a base that is almost twice as large as ours. They out-produce us.

My view is that they devote—it is my opinion—about 25 percent of their industrial work force to security items, and they do that year-in and year-out as part of their economy. They do not have the problem of deciding whether or not they should go into developing and manufacturing products for the security area or putting them into another section of the economy.

The defense portion of the Soviet economy is about 25 percent. If their defense work force, is not working in defense, then they are not working. They do not have a place to trade off.

That does not mean that over a long period of time the Soviet Union could not change their priorities, but at the present time, the things we have to worry about is, in my view, about 25 percent of their work force and that is one reason they can turn out products much faster than we can. They are not very good at transitioning from research and development into production, but they are very good, once they have done that, at product insertion into force structure.

They have almost every single item we have in our inventory, plus more. It is for that reason that we have submitted this budget. It is for that reason that we need to spend $142 billion next year on research, development, and acquisition.

With that, Mr. Chairman, I am finished with my opening statement.

[The prepared statement of Dr. De Lauer follow:]

PREPARED STATEMENT OF DR. RICHARD D. DELAUER

UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

INTRODUCTION TO THE FY 1985 RD&A BUDGET AND PROGRAM

Mr. Chairman and Members of the Committee:

A. STRUCTURE OF THE ACQUISITION PROGRAM

Three years ago, this Administration established fundamental management reform in the Department of Defense focused on coordinated planning, programming, and budgeting; improvement of the acquisition process; and provision of greater program stability.

The FY 1985 RD&A budget request of $142 billion is the means with which we propose to fund programs to continue essential modernization of our deployed forces. We propose improvements in both the hardware in use by our dedicated men and women in the field, in the process used to acquire this equipment, and in the necessary support structure.

The FY 1985 Acquisition Program, which I am privileged to review with you is our third report reflecting progress in this reform and in fulfilling our more fundamental pledge to arm America adequately against the present and future threat. This year's budget proposal is structured to provide needed capabilities which can be achieved at prudent cost. It reflects sound management of our limited resources, and efficient investment in cross-Service and cross-command programs. It is focused on the highest priorities that the Department of Defense must address to satisfy the basic security objectives with which the Secretary of Defense is charged.

It is on this basis that we request your support of the FY 85 acquisition budget, as well as the associated program projections for the succeeding years.

In developing the acquisition budget, we carefully considered the global nature of the threats which confront us, the major missions we are assigned, and the need for constancy--which, as I emphasized last year, is the key to a stable, affordable, modernization program.

Four basic considerations underlie this program:

- First, it delivers mission capabilities consistent with long established national security policy. We cannot assume that we will be relieved of any of these missions.
- Second, it rests upon an enduring commitment to collective security and improved joint operations. Force improvement in concert with our allies is a central aim. We do not assume that we will operate alone, nor that our military forces can be effective except as a unified team responsive to our commanders-in-chief in the field.
- Third, it reflects a structured balance among force expansion, readiness, sustainability, and modernization. We have carefully planned to achieve a measured balance. We cannot assume undue risk in any one of these areas, all of which are essential.
- Fourth, it reflects current priorities among many competing demands. Under our revised planning process, development of the FY 85 program began over a year ago in the Fall of 1982, when priorities were evaluated in concert with policy and strategy. Subsequently, the Department's top management has cycled this budget through an intensive program review, as well as a budget review, to refine, reassess, and update priorities for both acquisition management and mission requirements.

B. ACQUISITION PRIORITIES

The President's defense program requires that modernization of our capabilities be balanced among nuclear and conventional needs; and among major military mission requirements. This approach retains the flexibility to act effectively now, and to prepare for an uncertain future.

A strong free enterprise economy and industrial base--here and abroad--are the essential underpinnings of our defense posture. Investment in our technology base and protection of our technological strength are critical to the long term security of the U.S. and our allies. It is also our considered belief that success, particularly in achieving the conventional forces posture we need, is highly dependent on modern technology, and its coordinated application. We cannot effectively field this technology without an increasingly efficient industrial base and improved joint planning.

Modernization, in the true sense of the word, means achieving the military capabilities essential to respond to the contemporary environment as well as to the environments of the future. It depends upon our technological strengths, but does not mean wholesale introduction of technological sophistication into our forces as an end unto itself. To the contrary, modernization relies upon judicious application of our technological strengths to critical areas where they have the greatest leverage, particularly to those areas where opportunities exist to exploit our strengths and the weaknesses of aggressors who might threaten us. It also means making better use of the systems already available to us.

We have historically emphasized the superior performance of our weaponry, and will continue to seek better weapons than our opponents because we do not expect to be able to match the quantity of weapons of our likely opponents. Our acquisition management reforms will enable us to do this at affordable costs, while also improving reliability, support, and interoperability. Most importantly, top management attention has been re-directed to total mission area operations and capability, as opposed to giving priority to individual weapon performance. We will continue to examine our needs from a mission area perspective which emphasizes the integration of land, air, and naval forces.

C. NUCLEAR FORCES FOUNDATION

The foundation of our strategy and program is built on the adequacy of our strategic nuclear forces to deter aggression or coercion The opportunities for modern conventional defense depend upon this foundation having been established.

This budget reflects sustained progress toward more effective capabilities of our nuclear and conventional forces.

The President's five-point Strategic Modernization Program is designed to meet the foregoing criteria. The program is now well established; affordable; and can meet cost and schedule milestones.

In addition, President Reagan announced his Strategic Defense Initiative in his speech to the nation on last March 23. He directed studies to achieve two objectives: (1) assessment of the roles that defense against ballistic missiles could play in future U.S. and allied security, and (2) definition of a long term research and technology development program aimed at an ultimate goal of eliminating the threat posed by nuclear-armed ballistic missiles. The recent technology study concluded that powerful new technologies are becoming available that justify a major technology development effort to provide future technical options to defend against nuclear ballistic missiles. The strategic analysis concluded that pursuit of advanced technologies could offer options to enhance deterrence and increase strategic stability. Our FY 1985 RDT&E budget request reflects these conclusions, both by a restructuring of the program to gather the various DoD efforts of the Strategic Defensive Initiative into a more centralized management, and by increasing the funding in this area by $250 million, an increase of 16% over the level of funding previously planned by DoD for efforts in this area.

Our non-strategic nuclear forces contribute to deterrence by supporting a strategy of flexible response through a balanced combination of conventional, non-strategic nuclear, and strategic nuclear forces. In NATO, non-strategic nuclear forces are intended to deter a Soviet/Warsaw Pact conventional attack or first use of non-strategic nuclear weapons, and to couple NATO forces to the U.S. strategic forces.

Modernization and arms reductions are integral elements of a coherent national security posture. Modernization will help persuade the Soviets that we are serious about deterring war by protecting peace and freedom, and that it is in the best interest of the Soviet Union, as well as the U.S., to achieve the substantial reductions we are seeking in our as well as Soviet nuclear arsenals.

Our overall approach to our nuclear forces program expresses our grave concern over the full range of Soviet nuclear forces from intercontinental missiles to battlefield nuclear missiles. The evolution of Soviet strength and the realities of the nuclear force balance demand a sound strategic force structure and timely modernization to prevent any further shift of the balance in their favor. At the same time, we must maintain our efforts to achieve nuclear arms control agreements with the Soviets in order to reduce the risk of nuclear war.

D. EMERGING TECHNOLOGIES FOR CONVENTIONAL FORCES

We must, in addition, take the necessary steps to improve our conventional defense capabilities in order to increase our strength at all levels of the deterrence spectrum. NATO forces, given limited warning, risk being overrun by an intense Soviet conventional attack. Conventional weapons incorporating recent technological advances, effectively employed throughout the Alliance, offer a potential for improving the overall defensive posture and delaying the need for early use of nuclear weapons. This is particularly the case with air/land combat, where we are numerically inferior to the Warsaw Pact. These technological advances offer not only the prospect for improving the capability of individual systems but also the combined capability of our forces. Advanced battle management systems can raise the effectiveness of our forces by enhancing cross-Service and alliance coordination. Improved conventional weapons systems can significantly contribute to deterrence and defense against combined attacks designed to overwhelm our forces. By exploiting a qualitative edge in weapon system capabilities, we can help offset our quantitative disadvantage and reduce the risk of war.

Emerging technologies have already provided numerous possibilities for improving conventional capabilities. Improved interface between sensors and weapons, enhanced intelligence integration, stronger electronic countermeasures, and greatly improved long-range target acquisition are among the many applications. These capabilities are made possible through advances in micro-electronics, machine intelligence, computer and software technology and micro-optic sensing technology.

In addition to improving combat capabilities, the new classes of weapons will enable us to improve our capabilities against the enemy's follow-on forces. At the same time, new technological breakthroughs enable us to develop more effective and coordinated counter-air architectures by making it possible to oppose the full spectrum of enemy air operations with minimum delays. Significant prospects for improving conventional deterrence, delaying the need for early use of nuclear weapons, and thereby, enhancing overall security dictate that we continue to seek promising applications of emerging technologies to the air/land warfare mission areas.

E. COOPERATION WITH OUR ALLIES

An array of programs are underway within the United States and other NATO countries which will make it possible to capitalize on the potential offered by emerging technologies. Intensive consultation and coordination among the allies is essential in order to establish national and alliance priorities, and to establish programs which offer opportunities for sharing and exchange. At the same time, both U.S. and allied military authorities are evaluating how to refine doctrine to make the best use of technological opportunities and of our combined resources. Our joint efforts also help to enhance unification and improve overall efficiency within the alliance.

The Secretary of Defense has introduced the conceptual framework for "Emerging Technologies" in NATO. Priority attention in the Alliance is now focused on four mission areas: (1) Defense against first echelon attack; (2) Attack of follow-on forces; (3) Counter-air; and (4) C^3I and Counter-C^3. Other areas will also receive appropriate consideration in the NATO framework, and at the same time, bilaterally with the concerned nations. These include the maritime mission area, and special requirements of the Northern and Southern regions of NATO.

The goal, which is shared by our NATO partners, is to make real, visible and expeditious progress in cooperative efforts to field effective systems that would otherwise not have been widely deployed, and to accelerate procurement of selected systems consistent with an overall long range acquisition strategy within the alliance. It is important that common concepts and doctrine serve as the basis for effective integration of allied conventional force improvements. It is particularly critical for the Congress to support this effort.

We will pursue similar efforts with Japan and other allies on the basis of defining forces/missions consistent with U.S. and allied objectives, and then working to rationalize these two sets of needs in a way that most efficiently uses the resources of all. We are coordinating efforts with the Japanese, for example in the areas of air and sea lane defense within our mutual broad-based mission needs.

Success in the application of available new technologies ultimately depends upon coordinated efforts to modernize military doctrine and procedures in concert with the introduction of capabilities. We are making progress both on a cross-Service basis through the leadership efforts of the JCS, and on a bilateral and multilateral international basis as well.

F. TECHNOLOGY TRANSFER CONTROL

One of the Soviets' major weaknesses of the past was their technology base and their inability to translate their research into high quality end items. To remedy this deficiency, as well as to enhance their military power, the Soviets have devoted vast amounts of their financial and personnel resources to the acquisition of Western technology. They consider the acquisition of Western technology as an effective tool in reducing the costs, risks and time involved in overcoming their scientific, technical and military shortcomings. Acquisition of the most needed and critical foreign technology is planned at a very high level to facilitate the decision making, planning, and allocation of resources.

The Soviets have been very successful in obtaining vast amounts of militarily significant Western technology and equipment through legal and illegal means. They apply diverse acquisition methods--often several approaches simultaneously. The Soviet intelligence services (KGB and GRU) have the primary responsibility for collecting Western classified, exportcontrolled and proprietary technology using both clandestine and overt collection methods. Western technology plays an extremely important role in the development of military capabilities by the Soviet Union. We need to prevent the continued Soviet improvement of already deployed weapons and their development of new weapons through the acquisition and exploitation of advanced Western technologies.

As we might expect, the Soviets also encounter difficulties in exploiting and adapting Western equipment in their reverse engineering efforts to achieve a production capability. Problems encountered include material purity, dimensional tolerances and production quality. Although the resulting performance level is often less than that of the Western item, it usually represents an important improvement over previous Soviet products.

G. SCIENCE AND TECHNOLOGY BASE

The free world's advanced technological capability is integral to maintaining a strong defense and, hence, deterrence. The U.S. enjoys a certain margin of technological superiority, but we can't take our lead for granted. The Soviet Union is making a determined and, in many cases, successful effort to reduce or overcome our technological lead.

Discoveries and technological breakthroughs that can have a force multiplier effect are made through investment in our science and technology base. While we seek to take advantage of the opportunities to enhance our immediate defense capabilities, we must, at the same time, continue to invest in our future.

Our earlier reliance on superior technology to field superior weapon systems to offset quantitative disadvantages has been jeopardized by recent Soviet technological advances. In several critical areas of ground combat, the efforts of Soviet R&D have led to the fielding of some weapon systems which are technologically equal to our own. As the Soviets continue to increase their R&D efforts and proliferate their new systems, we must match their progress with contributions from a vigorous R&D effort consisting of the defense industry, independent R&D programs, and allies who are technologically advanced.

During the 1965-75 period, the real dollar value of our technology base activity declined by about 50%. Real growth was resumed in 1976, but at a very low rate. This defense program requests a 5%-6% real increase per year in technology base activity. This accounts for slightly more than 1% of our total defense budget each year; yet, it is this category of program activity that is critical to our ability to efficiently meet the threat 10 to 15 years in the future.

H. INDUSTRIAL BASE

The requirement to meet future defense needs also demands that we attend to the industrial base. We do not maintain a large standing army on the Soviet scale, and are therefore reliant on our capacity to mobilize forces and manufacturing equipment needed to sustain them.

The Soviets have a military production policy which stresses large quantity buys over long periods of time, maintenance of defense production lines for wartime surge, and a national plan for conversion of specified civil plants to military production for additional wartime surge. They also ensure retention of plant floorspace and skilled manpower in defense R&D and production organizations through central control. They maintain full capacity utilization by early transition into new products or product specialties when programs are cancelled or completed.

Through various initiatives contained in the Acquisition Improvement Program (AIP) we are encouraging an increase in capital investment in the industrial base by the private sector. The Military Departments and Defense agencies are also advancing innovative acquisition strategies, which are reflected in this budget to hold down production lead times along with the associated costs. In those areas where production lead times are too long, we are taking steps to identify critical components and to stockpile them in adequate quantities. The capacity and readiness of our industrial base is critical to the credibility of our overall deterrent, and thus to the overall global stability we seek.

I. THE MANAGEMENT CHALLENGE

Success in translating this budget and the associated five year plan into a sound national security posture rests on consistent, sound and prudent management. This management cannot be accomplished by the Department of Defense alone, but must be a collective effort involving industry, the Department, other executive agencies, and the Congress. We must have a consistent, stable joint management approach in order to develop and acquire the weapons systems required to serve mission needs and maintain our national security.

A variety of initiatives resulting from the Defense Acquisition Improvement Program have been undertaken to accelerate the acquisition process in order to be more responsive to the threat and to increase acquisition efficiency through better management. We are particularly concerned with the problem of reducing costs while continuing to meet our basic security needs. Much of the cost growth we have experienced in the past has been due to instability in our programs. Repeated stops, starts, and stretchouts have generally occurred in order to satisfy near-term budgetary constraints. The result has been serious growth in long-term costs for some systems.

Since program instability is the result of a number of contributing factors, the solution to the problem must be comprehensive. It is vital at the outset to establish a consensus with Congress on our long range defense priorities, missions, and economic requirements. We are continuing to work to build this essential foundation through specific initiatives such as multi-year procurement and economic production rates. Both of these initiatives are designed to lend greater stability to our programs, and are strongly supported by industry. In addition, both can save billions of dollars in acquisition costs. In order to achieve the benefits of increased stability, however, the support of Congress for these initiatives is essential.

Unanticipated cost growth has also been caused by overly optimistic cost estimates for many of our programs. We are taking the necessary steps to minimize this problem in the future. Our objective is to provide a realistic budget for defense programs which contains only those programs we really need, and a realistic and full assessment of their cost. To the degree that our efforts are successful and are supported by Congress, greater stability will accrue to all of our programs with consequent reductions in overall cost.

We are also aware that unless the systems we acquire are ready to use and can be sustained for long periods, all other acquisition initiatives may become irrelevant. A variety of management initiatives are included in the Acquisition Improvement Program to ensure that problems of readiness and sustainability are considered from the very beginning of each of our programs, and are attended to at each major milestone in the acquisition process. Spare parts acquisition reform and many other specific acquisition management activities compliment these initiatives.

In addition, we have placed high priority on our R&D program for weapon support and logistics. It has three principal thrusts. At the centerpiece is our funded R&D program that demonstrates high payoff support technologies to accelerate their early transition into the field. Our management of this program has provided DoD-wide objectives and a framework for the Services to ensure a coordinated approach. Secondly, we have institutionalized within our evaluation of contractor independent research and development (IR&D) programs this vital area of focus, and communicated to industry our objectives of applying technology to substantially reduce the logistics support for current and future weapon systems. Third, we have expanded the R&D framework to include initiatives aimed at increasing the productivity of the support system itself, such as depots, transportation, supply, etc. These elements of our R&D program combine with our Acquisition Improvement Program to increase the importance of logistics at the front end of weapon system development, formalize it within the DSARC and budget processes, and strengthen the technology base. It is essential, however, that funding for our initiatives in readiness, support and R&D for weapon sustainability and logistics be provided in order to reap the benefits of our management initiatives in this area.

Finally, we are placing special management emphasis on improving competition throughout the acquisition process in order to achieve greater savings and enhance the defense industrial base. We have already established organizational mechanisms in each of the major buying commands to promote competition wherever it makes economic sense to do so. Competition goals have been set and incentives are being provided to assist in attaining them.

J. SOVIET MODERNIZATION

The persistent Soviet force modernization program remains our greatest concern. Figure I-1 compares overall defense expenditures of the U.S. and NATO with the estimated dollar cost of defense for the Soviet Union and its Warsaw Pact allies. The U.S. seeks, in cooperation with its allies, to maintain a military balance at an affordable cost. Figure I-2 shows the fraction of GNP estimated to be dedicated to defense in the U.S. and the Soviet Union. Until recently, in the Soviet Union, the share of the resources allocated to the military has allowed for some growth in private consumption. However, as growth in the Soviet economy slows, the Soviets have been faced with some difficult resource allocation decisions. Scattered evidence suggests that economic problems have played a role in retarding the growth of resources devoted to defense procurement. However, Soviet RDT&E spending has continued its unabated growth. Uncertainty about the extent clouds our assessment of the future effect of economic problems on defense. In the past, however, Soviet economic problems have not led to a substantial reduction in the growth in the military portion of their national resource allocation.

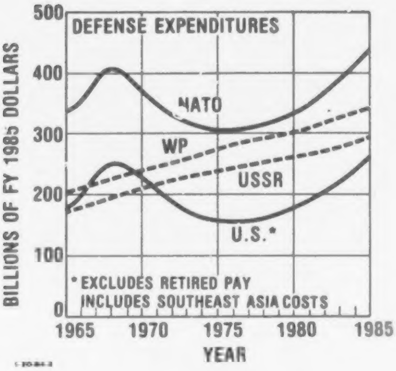


FIGURE I-1. A Comparison of NATO Defense Expenditures with Estimated Dollar Cost of Warsaw Pact Defense Activities

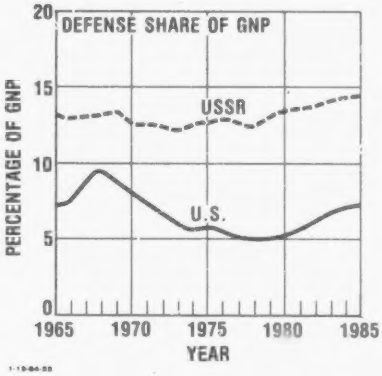


FIGURE I-2. A Comparison of the Defense Fraction of U.S. GNP with Estimated Defense Fraction of USSR GNP

A comparison of production ratios of major classes of weapons in Figures I-3 and I-4 shows a Warsaw Pact military advantage of more than two-to-one in most classes. The "FOR" bar on the charts indicates that production earmarked for a country's/alliance's own forces; whereas the "BY" bar is indicative of total production. Except for major surface combatants, the USSR has substantially outproduced the U.S. in the period of 1974-1983, not only in terms of the total weapons produced BY the USSR for all countries, but in terms of the weapons produced FOR USSR forces. The situation is improved when NATO acquisition is compared with that of the Warsaw Pact. Even though procurement expenditures by the Soviets and their allies have shown reduced growth in recent years, they are expected to continue to introduce new weapons at a high rate.

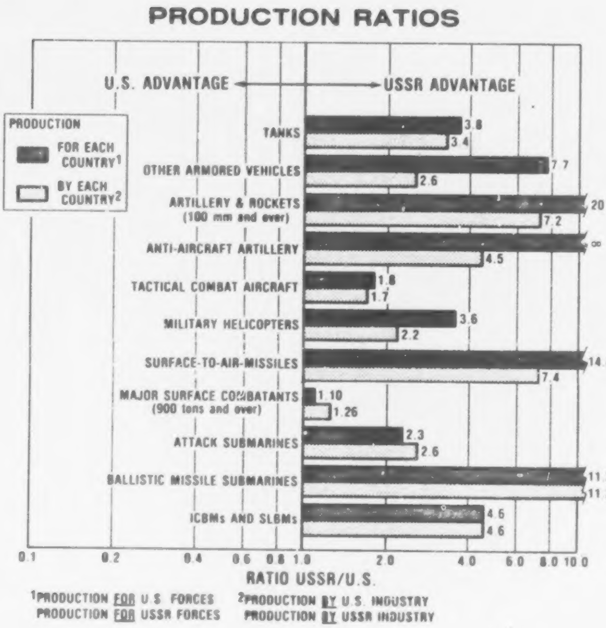


FIGURE I-3. Production Ratios of Selected Weapons USSR to U.S., 1974-1983

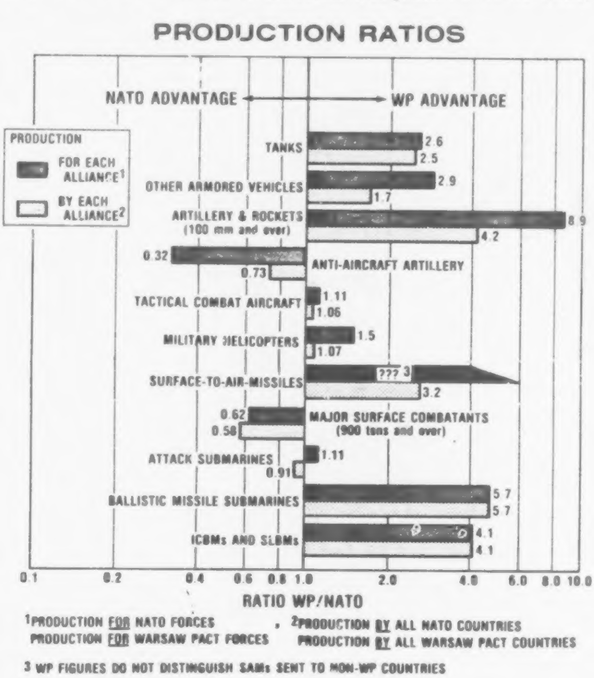


FIGURE I-4. Production Ratios of Selected Weapons WP to NATO, 1974-1983

Further assessment of the military RD&A balance in Chapter II, which follows, includes additional quantitative indicators which you can consider in forming your own conclusions about Soviet modernization and its impact on the military balance. The Soviet modernization program is a formidable challenge to peace, to U.S. security, and, in the most practical terms, a challenge to our collective abilities to find ways to deal with it.

K. THE CHALLENGE FOR THE FUTURE

Insights into the Soviet acquisition and decision-making process combined with a knowledge of activities underway in their defense industry provides considerable knowledge of the existence and status of many new weapon programs. We can now predict most Soviet force developments they intend to field by the end of the decade. Table I-1 provides a list of about 50 of roughly 200 Soviet programs expected to reach Initial Operational Capability in the eighties. When these programs are added to about 80 systems already deployed since 1980, a broad and very diverse Soviet military acquisition program for the decade of the 1980s is evident.

A comparison of major U.S. and Soviet force improvement trends for the late 1980s shows many common goals. Six major areas receiving significant emphasis are: 1) improving strategic forces survivability and lethality; 2) improving the ability to conduct military operations in distant areas; 3) improving command and control assets survivability; 4) improving strategic defense, 5) expansion of space programs, and 6) improved effectiveness of tactical forces.

Soviet top leadership promises the deployment of new weapons, space and military support systems. This threat will come to pass not as a result of what the U.S. or the Free World might or might not do in the near term, but primarily as a result of earlier Soviet views of their requirements and subsequent planned investment for military forces. Major systems recently deployed or now late in development were generally initiated at the highest levels of Soviet leadership about ten years ago.

The Soviets view a powerful military as essential to ensure their national security. Based on what we know of their current programs we see no let-up in the rate of deployment of Soviet systems over the next ten years. Soviet ideology leads the Soviets to believe eventual victory is their long term destiny and this belief allows them to justify the hardship and sacrifices they are making to sustain the military buildup. The negotiation of an equitable, verifiable arms control agreement remains our first priority. The challenge we face is whether we have the will to sustain the competition against a steadily growing threat.

TABLE I-1
Some Major Soviet Development Programs Reaching IOC in the Mid-1980s

- STRATEGIC OFFENSIVE SYSTEMS
  - SS-X-24 (MX Class) Solid Propellant Intercontinental Ballistic Missile (ICBM)
  - Improved Liquid Propellant ICBMs
  - SS-X-25 Small Solid Propellant ICBM
  - SS-N-20 (D-5 Class) Sub Launched Ballistic Missile (SLBM)
  - Typhoon (Ohio Class) Nuclear Powered Ballistic Missile Submarine (SSBN)
  - Blackjack (B-1B Type) Heavy Bomber
  - Air Launched Cruise Missile (ALCM)
  - BEAR H, Probable ALCM Carrier
  - SS-NX-21 (Tomahawk Class) Sea Launched Cruise Missile
  - SS-NX-23 Sea Launched Ballistic Missile
  - Y-Class Nuclear Cruise Missile Submarine (SSGN) Mod
- STRATEGIC DEFENSIVE SYSTEMS
  - SA-10 Surface-to-Air Missile--Mobile Modification
  - Modified GALOSH Anti Ballistic Missile Interceptor
  - High Acceleration Anti Ballistic Missile Interceptor
  - Pushkino Very Large Anti Ballistic Missile Radar
  - SU-27 (FLANKER) Interceptor Aircraft
  - MAINSTAY Airborne Warning & Control System (AWACS)
  - Abalakovo Very Large Radar
- SUPPORT SYSTEMS
  - CONDOR Heavy Lift Transport (C-5A Type)
  - CANDID Tanker (C-141 Type)
- TACTICAL SYSTEMS
  - SS-X-23 Short Range Ballistic Missile
  - Short Range Ballistic Missile (SRBM) Modifications
  - SA-X-12 Surface-to-Air Missile
  - New Attack Helicopter
  - Electro-Optical Tactical Air-to-Surface Missile
  - Large Caliber Unguided Rocket
  - Laser-Guided Bomb
  - Cluster Bomb
  - New Mobile Self-Propelled Anti-Aircraft Artillery (Sgt York Type)
  - Millimeter Wave Anti-Tank Guided Missile
  - SS-N-19 Long Range Anti-Ship Missile
  - OSCAR Class Nuclear Powered Cruise Missile Submarine
  - SS-N-22 Short Range Anti-Ship Missile
  - Ground Launched Cruise Missile
  - New Naval Surface-to-Air Missile
  - Big New Nuclear Powered Submarine
  - New Medium Size Nuclear Attack Submarine
  - SLAVA Class Cruiser
  - MIG-29 (FULCRUM) Interceptor Aircraft
  - AA-X-10 Air-to-Air Missile
- SPACE SYSTEMS
  - Medium Lift Space Booster
  - SATURN Class Heavy Lift Booster
  - Space Plane
  - Space Shuttle
  - Large Space Station
  - Potok Communications Satellite (4 GHz)
  - Antisatellite System

BALANCE OF MILITARY EQUIPMENT ACQUISITION AND TECHNOLOGY

A. INTRODUCTION

To set the stage for our program of military research, development and acquisition, in this chapter we compare some important measures of the trends of the USSR/U.S. and the Warsaw Pact/NATO alliances' programs to develop and produce military weapons.

Soviet military power is of paramount importance to the Soviet state. They have maintained and equipped large military forces throughout most of their history. The Soviets have always felt threatened from without and have sought to extend and maintain influence and control beyond their borders. They believe that they need numerical superiority to ensure national security. The Soviets do not seek security through balance of power relationships but rather by being stronger than any combination of potential adversaries.

Soviet defense production is expected to continue to receive high priority. The slackening in output of the last few years has lessened as the problems associated with phasing out older weapons systems and bringing in newer systems, developing and manufacturing higher technology weaponry and industrial base modernizational have been overcome. However, serious basic problems exist in the Soviet economy and unless improvements are made the Soviet leadership will be faced with difficult decisions in order to sustain increased levels of military spending.

We use four kinds of indicators to illustrate various aspects of the military equipment acquisition (RDT&E and procurement) balance--the number of new weapons or major modifications introduced, the number of weapons produced, the average age of weapons in the forces, and estimates of annual resources, measured in terms of dollar costs. The comparison of military investment is particularly useful as a significant leading indicator of the future military balance. In addition, we display some estimates of the total inventory value which is simply the total procurement cost of all the weapons in the force.

We recognize that these indicators do not fully describe the military balance. They obviously do not tell us about the interaction of the forces in war, or how the enemy or our allies will actually perform in combat, or what the outcome of battle will be. Despite their limitations, these static measures provide an important and useful comparison of potential capabilities, and provide useful insights and a historical perspective of major trends.

We shall see the evidence of the persistent, increasing Soviet threat as we compare (1) the weapons R&D and procurement process and the defense industrial base, (2) weapons acquisition and investment trends, and (3) the military technology base.

B. WEAPONS R&D AND PROCUREMENT PROCESS

1. Soviet Military Research and Development

The Soviet Union believes world leadership in science and technology is a major element in overall world leadership--industrially, economically, militarily, and politically. The Soviets have established a centrally controlled system to carry out their R&D programs, and to implement the flow of research through the various phases--fundamental, exploratory and applied.

The Politburo sets the broad national R&D policies and occasionally even initiates new weapon programs (e.g., atomic bomb and ballistic missile developments). Soviet R&D strategy for the achievement of these goals includes a high and steadily increasing level of resource investment and essentially involves two approaches: (1) the establishment and expansion of a large indigenous technology base to support military and industrial development programs; and (2) the acquisition and assimilation of Western technologies to reduce the time, cost and risk involved in supporting their industrial and military programs. The Soviet military RDT&E program is characterized by a stability of funding, personnel, program plans and steady growth.

The primary performers of Soviet R&D are research institutes, design bureaus, and production associations. These activities are vertically organized, which has led to activities conducted by highly specialized independent entities often isolated from each other.

The research institutes (military and civilian) conduct most Soviet research projects and many are under the jurisdiction of the Academy of Sciences. The overall number of research institutes in the USSR has doubled from 1,500 in 1960 to over 3,000 in the early 1980s. This reflects a steady expansion of the Soviet research base and a significant level of capital investment.

Over the past several years, the Academy and other Soviet civilian research institutes have been tasked with an increasing number of defense projects. Military R&D has risen to where it now accounts for about half of all R&D conducted in the USSR. This compares to the roughly thirty percent of all U.S. R&D which is currently military-related work.

Design bureaus are assigned to the defense industrial ministries and are critically important for technical innovation and development in the Soviet Union. Organizationally located between the research community and the separate production organizations, the design bureaus are responsible for developing new equipment embodying the best available technology consistent with system requirements. Features of this management approach include multi-year program funding, planned product improvement and early responsiveness to U.S. and NATO program developments. Only a small amount of basic research is performed by design bureaus.

Major new Soviet systems or modernization programs take about 8-15 years to develop. This is about the same time it now takes in the U.S. The Soviets have maintained this development time despite often shifting the focus and specialities of their system designers in response to new requirements.

Military service developed requirements keep the design bureaus fully occupied. New programs are routinely initiated that keep design bureaus fully employed.

Roughly 50 major system design bureaus are involved in the development of Soviet major weapons, space and support systems. Table II-1 compares the number of Soviet design bureaus in selected categories with the number of major U.S. system development organizations conducting similar programs. While the number of U.S. and Soviet weapons and space development organizations are about the same, differences in how the Soviets task their organizations has resulted in greater output over time. Each Soviet organization has its own specialization(s) and continuously conducts development at the full employment level-of-effort the Soviets feel is needed to handle their long term military/space requirements. U.S. contractors have more cyclical business and employment fluctuates accordingly, substantially dropping if they do not win new prime contracts.

TABLE II-1. Number of U.S. and USSR Major Military System Developers*

SYSTEM TYPE	U.S. MAJOR SYSTEM DEVELOPMENT ORGANIZATIONS	USSR DESIGN BUREAUS
STRATEGIC & TACTICAL MISSILES	12	11
AIRCRAFT	12	9
SHIPS	1	6
SATELLITES	8	6
TRACKED VEHICLES AND ARTILLERY	8	7
RADARS	7	8
TOTAL	48	47

* Some involved in more than one system type

Full employment and steady growth has allowed the Soviets to conduct up to three major development programs in each major design bureau product base at the same time. More than 200 major military development programs are initiated by the 50 major Soviet design bureaus every 10 years.

Soviet R&D practices can be summarized as follows:

- Great emphasis on fulfillment of development milestones and schedules.
- Reduction of development risk through:
  - Incremental improvements
  - Use of proven technologies
- Strict standardization and specification constraints imposed.
- Emphasis on producibility/dependability/simplicity/durability/reliability/serviceability.

Organizations called production associations are replacing many independent research institutes, design bureaus and other production organizations as the basic units of Soviet industry. Associations vertically combine a number of organizations under a single management; they can include some or all of the above types of independent organizations. The principal purpose of the shift to the association form of management is to accelerate the pace of science and technology progress and to reduce the lead times in the implementation of new technology into production. Eventually most of Soviet industry will be converted to the association form of management.

The Soviets have a military production policy which stresses large quantity buys over long periods of time, maintenance of defense production lines for wartime surge, and a national plan for conversion of specified civil plants to military production for additional wartime capability. They also ensure retention of plant floorspace and skilled manpower in defense R&D and production organizations through central control. They maintain full capacity utilization by early transition into new products or product specialties when programs are cancelled or completed.

2. Soviet Defense Industry Weaknesses

Despite its size, experience, stability and priority, the Soviet military R&D system has a number of inherent weaknesses. These, in general, are a result of the overall Soviet political, economic and organizational philosophy. Several specific key factors have had a significant impact on the efficiency and effectiveness of Soviet R&D. One such factor, already mentioned, stems from their vertical concentration of R&D activities in large, highly specialized, independent entities. This leads to organizational isolation of R&D organizations from each other and from production organizations. The centrally managed system cannot quickly assimilate or coordinate changing directives and requirements coming from several associated external sources.

The Soviets also are unable to make use of the inherent advantages of competition found in free enterprise economies. Some reforms are underway (such as the production associations) but much of the traditional system has been left intact. Equipment and instrumentation shortages plague most Soviet R&D efforts and R&D organizations are often compelled to design and manufacture their own instruments. Computer services are in especially short supply. The USSR also tends to follow the U.S. in technology because Soviet rewards are for maintaining schedule rather than technical innovations that win contracts.

Although the Soviet Union annually graduates around three times the number of engineers graduated in the U.S. (a high percentage of U.S. graduate students are foreign born), there is widespread underemployment. Soviet engineering manpower is used inefficiently and is frequently over-specialized.

To remedy the difficulties in translating their research into efficiently produced, high quality end items the Soviets have established a vast program for the acquisition of Western technology. Even here, the Soviets encounter difficulties in exploiting and adapting Western equipment in their reverse engineering efforts to achieve an efficient mass production capability.

3. R&D Output

The Soviet Union considers the amount of resources devoted to military R&D to be a state secret. The output of the military R&D effort can be seen in the new and improved weapons that result, but the size of the input investment to develop them is concealed.

Figure II-1 compares the number of major new weapons and major modifications introduced each year and displays trends over the period 1960 to 1983. Figure II-1 shows the Soviets maintaining the number of new systems and major modifications being deployed at 10-15 per year since 1960.

NEW AND MAJOR MODS

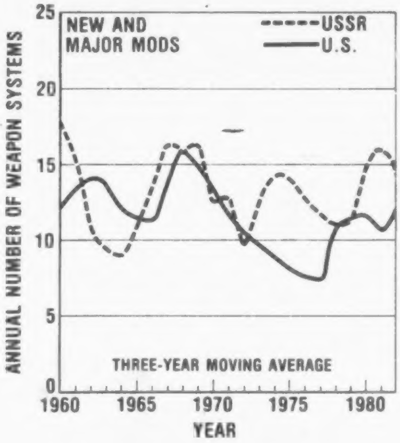


FIGURE II-1. Number of U.S. and USSR New Weapons and Major Modifications Reaching Initial Operational Capability Annually

In addition, many modification programs of lesser significance are conducted. While the U.S. deployed the same average number of systems as the Soviets in the 1960s, the average dropped sharply in the early 1970s. In the past two years, however, the number of new U.S. systems reaching initial operational capability has increased.

The number of known Soviet systems deployed thus far in the 1980s is twice that of the U.S. New Soviet systems recently deployed are the result of program development decisions made by their leadership in the early and mid 1970s. The approximately 80 systems the Soviets have deployed thus far in the eighties include a large number of incrementally improved systems and reflects the Soviet step-by-step approach in incorporating new technology.

C. WEAPONS ACQUISITION AND INVESTMENT TRENDS

This section provides indicators of U.S. and USSR military acquisition and investment in totals and for the major strategic and general purpose forces missions.

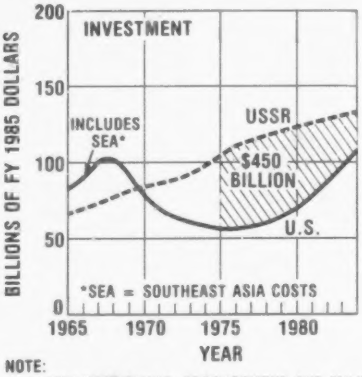
Soviet authorities provide little direct information about their research, development, procurement or their investment activities. Estimates of Soviet military investments can be developed by using a number of different methods. The following estimates are based on what it would cost to develop and build in the U.S. the Soviet weapons and systems assigned to each military mission category. Prevailing U.S. dollar prices for materials and labor (including overhead and profit) are used, as well as U.S. production technology. While they do not represent the cost to the USSR, they are indicative of trends or major changes in the size of the Soviet effort over time. Also, investment usually implies an input to a process but we estimate investment based on the observed output of the weapon acquisition process--the products of R&D and procurement.

1. Overall Military Investment

Resources committed to RDT&E, procurement, and military construction are investments which maintain or increase the value of a nation's military assets for the future. A major determinant of military capability in any given year depends in part on the inventory of equipment, facilities and weapons built up over time. The total value of that inventory depends, in part, on the rate at which new investments are made.

Figure II-2 shows a steady increasing Soviet military investment compared to the ups and downs of U.S. military investment. In the last 10 years the estimated dollar cost of Soviet military investment has exceeded that of the U.S. by roughly $450 billion as a result of persistent real growth over a 20 year period.

Figure II-3 shows that we are starting to overcome the Soviet procurement lead. However, in the past ten years, we estimate that the dollar cost of Soviet procurement would have been $200 billion more than the cost of U.S. procurement.



NOTE:
(1) INCLUDES RDT&E, PROCUREMENT AND MILITARY CONSTRUCTION.
(2) INCLUDES NON-DoD-FUNDED DEFENSE PROGRAMS.

FIGURE II-2. A Comparison of U.S. Defense Investment Expenditures with Estimated Dollar Cost of USSR Defense Investment

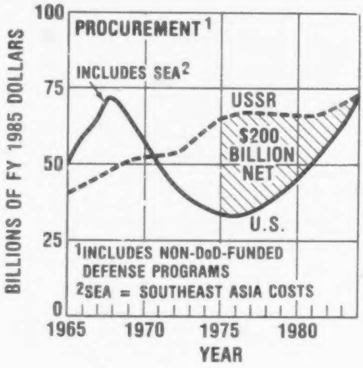


FIGURE II-3. A Comparison of U.S. Defense Procurement Expenditures with Estimated Dollar Cost of USSR Defense Procurement

The persistent growth of Soviet military RDT&E spending (Figure II-4) has resulted in current estimated dollar costs for RDT&E activities roughly double those of the U.S. Comparisons of R&D activities are based on estimates that are considered to be the least reliable of Soviet defense expenditure estimates since they develop from less explicitly related and aggregated measures.

Soviet RDT&E has been increasing in real terms at an average of about seven percent per year for 20 years (doubling in real terms every ten years) and is growing more than other Soviet military investments. In the past ten years the dollar cost of Soviet R&D activities have been an estimated $185 billion more than the U.S. While there is significant uncertainty in these estimates, this long term trend cannot be allowed to continue.

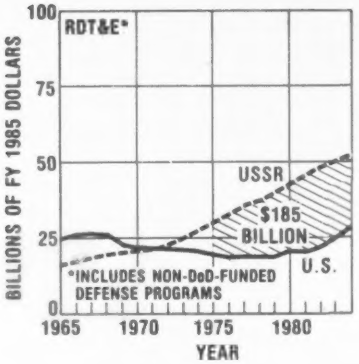


FIGURE II-4. A Comparison of U.S. Defense RDT&E Expenditures with Estimated Dollar Cost of USSR RDT&E

2. Strategic Forces

In the early 1970s the strategic forces of the two superpowers were considered to be in rough parity. Figure II-5 shows that over the past ten year period, the estimated total cumulative dollar costs of Soviet strategic forces exceeded that of the U.S. by about $250 billion (in constant FY 1985 dollars), a difference that is almost double the total U.S. outlays for strategic forces for the same period. With this disparity the earlier parity of forces was unlikely to continue.

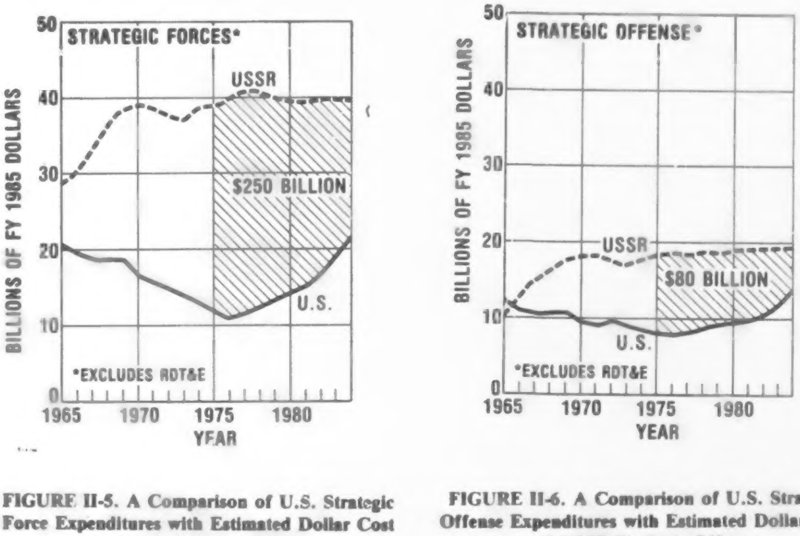


FIGURE II-5. A Comparison of U.S. Strategic Force Expenditures with Estimated Dollar Cost of USSR Strategic Forces

FIGURE II-6. A Comparison of U.S. Strategic Offense Expenditures with Estimated Dollar Cost of USSR Strategic Offense

a. Strategic Intercontinental Offense

These forces comprise intercontinental bombers and associated tankers and air-to-surface missiles, land based intercontinental ballistic missiles (ICBM), submarine launched ballistic missiles (SLBM) and the associated submarines (SSB/SSBN). Figure II-6 compares the estimated costs for these forces and shows that for the past ten years the USSR estimated dollar cost of strategic offense forces was twice corresponding U.S. expenditures.

Figure II-7 depicts the weapons and systems in this category that became operational or are expected to be operational between 1960 and 1990. The contrast from 1972 to 1979 in the era of detente after SALT I is particularly striking. Note that the high level decision to proceed with full development of these systems is typically made ten years before the year of initial operational capability (IOC).

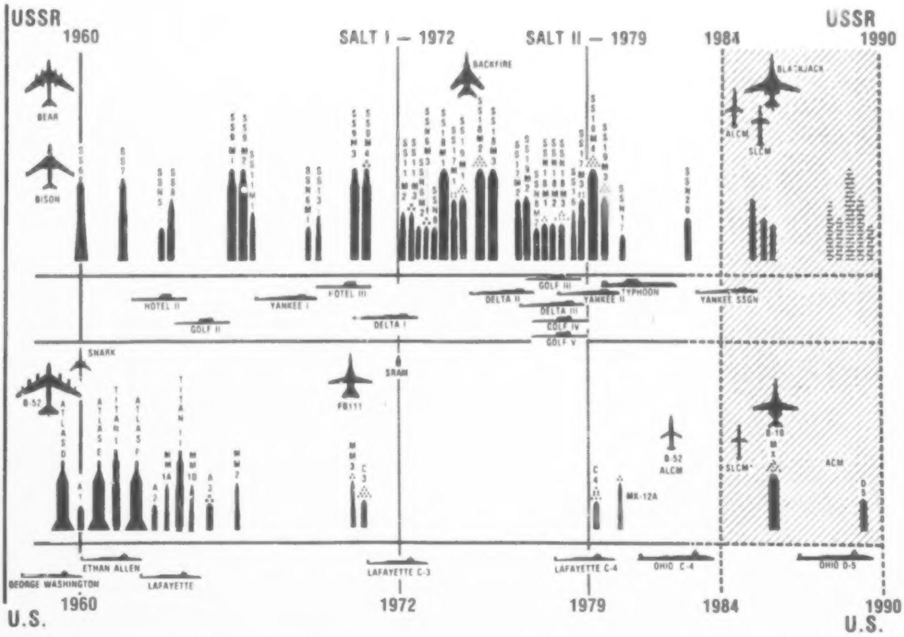


FIGURE II-7. U.S. and USSR Strategic Offensive Systems Since 1960 (Depicted by Date of System IOC)

The Soviet strategic offense buildup in the decade of the '70's is seen in the magnitude of the estimated dollar cost of Soviet strategic offense procurement activities shown in Figure II-8. The dollar cost of USSR strategic offense procurement is estimated to have been approximately $50 billion more than that of the U.S. for the last ten years.

Soviet strategic forces are considerably newer than comparable U.S. forces. The comparative trend of average age for ICBMs is shown in Figure II-9.

The estimated total inventory "value" (defined as the average unit procurement cost multiplied by the quantity in the force) of all the weapons in the operational forces is shown in Figures II-10 and II-11.

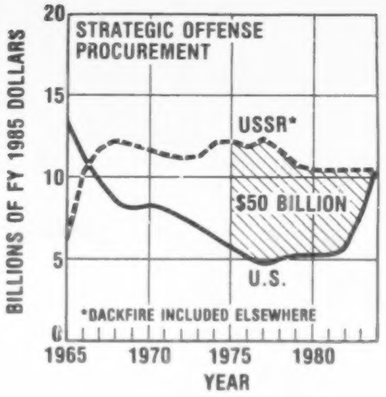


FIGURE II-8. A Comparison of U.S. Strategic Offense Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

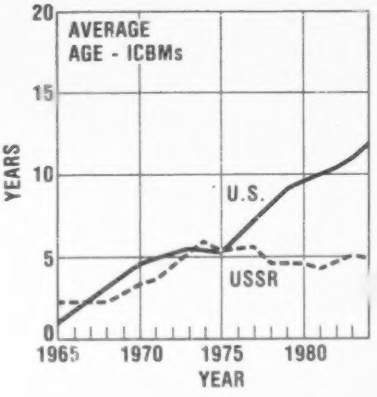


FIGURE II-9. A Comparison of Average Age of U.S. and USSR ICBMs

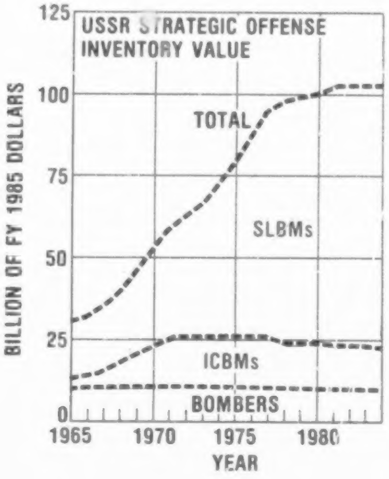


FIGURE II-10. USSR Strategic Offense Force Inventory Value

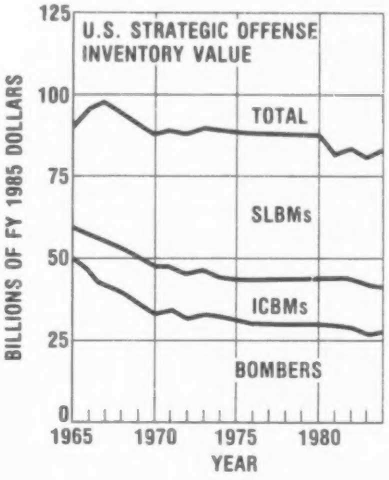


FIGURE II-11. U.S. Strategic Offense Force Inventory Value

The estimated inventory value of USSR strategic offensive weapons has exceeded that of the U.S. since the mid-70's and is now about one-fourth greater. Further, the pattern of the values retained in the strategic offense forces is markedly different for the U.S. and the USSR. The greater investment and the longer retention in active forces result in the current estimated "value" of Soviet SLBM forces alone being approximately equal to total current inventory value of all U.S. strategic offense forces.

Major Soviet improvements to their strategic offensive forces include deployment of new solid propellant land-based systems. The Soviet Navy is presently replacing shorter range SLBM systems exposed to Western ASW in their open ocean patrol areas, with long-range systems that can be deployed close to the Soviet Union. The Soviets are also developing a new heavy bomber, the Blackjack. The new bomber is expected to be equipped with a new air-launched cruise missile (ALCM) which will provide the capability to attack targets from long range.

For our part we are planning to modernize our ICBM forces with PEACEKEEPER missiles; our sea-based forces with new TRIDENT submarines armed with C-4 missiles and eventually the improved D-5 SLBM; our bomber forces with the new B-1B bomber scheduled to become operational in 1986, the Air Launched Cruise Missile, and a new advanced cruise missile. Research for an Advanced Technology Bomber (ATB) and small ICBM is currently underway.

b. Strategic Defense

The principal purpose of strategic defense is to enhance the survivability, and hence the effectiveness of strategic deterrence--the National Command System network, strategic retaliatory forces and our military force and base infrastructure. In the 70's the U.S. essentially eliminated strategic defense procurement and forces. A comparison of the estimated dollar cost of U.S. and Soviet strategic defense procurement is shown in Figure II-12.

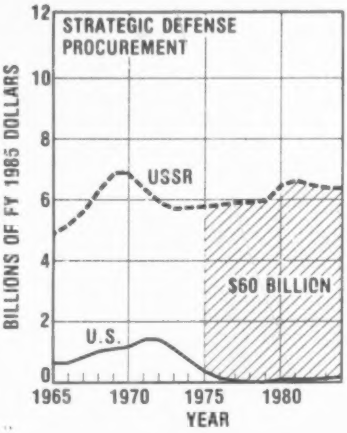


FIGURE II-12. A Comparison of U.S. Strategic Defense Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

About one-third of Soviet procurement for strategic forces has been for procurement of strategic defense systems (including ballistic missile and air defense but excluding civil defense). The Soviets have installed and maintained a large strategic defense force to defend against a large and diversified threat from many nations. It includes the world's most extensive air defense of the homeland consisting of thousands of radars and interceptor aircraft, and a limited ballistic missile defense of Moscow. It is estimated that over the past decade the dollar cost of Soviet strategic defense activities have been more than the cost of U.S. strategic offense activities. Soviet strategic air defense costs have been many times more than U.S. expenditures on bomber forces which, presumably, is one of the major drivers of Soviet expenditures on strategic defense.

The Soviet's strategic air and missile defense activities undergo constant modification and improvement. New generation Soviet SAMs, a look-down shoot-down fighter (Foxhound) and an Airborne Warning and Control System (AWACS) platform are coming into service, along with new or modified Anti-Aircraft Missiles. In ballistic missile defense they are now upgrading the interceptors around Moscow. Also nearing completion are five very large radar sites located throughout the Soviet Union for early warning and possibly ABM battle management.

The U.S. is currently introducing F-15 interceptors into its national air defense and is providing AWACS support for these forces. The U.S., in conjunction with Canada, is in the process of upgrading the air surveillance network around North America. Specifically, the development of new unattended radars along the Dew Line and Over the Horizon Backscatter (OTH-B) radars are intended to provide the National Command Authorities (NCA) sufficient tactical warning to increase survivability of strategic retaliatory forces.

Both the U.S. and the Soviet Union maintain a high level of research activities designed to exploit the technological opportunities for strategic defense that emerge from the expanding technology base. Both countries recognize that the rapid expansion of the technology base could offer opportunities for significant increases in defensive capability. Our recently completed studies responding to the President's initiative to eliminate the threat posed by ballistic missiles graphically describe these long range opportunities in ballistic missile defense.

3. Non-Strategic Nuclear Forces

Non-strategic nuclear forces (NSNF) are an essential link between conventional and strategic nuclear forces and provide a wide range of options to deter conventional, chemical or nuclear attack. This category includes intermediate-range ballistic missiles, ground-launched cruise missiles, dual-capable aircraft, short and medium range missiles, and nuclear capable artillery.

The U.S. is modernizing, augmenting and adding versatility to our NSNF. We are deploying the Pershing II theater ballistic missile, and ground launched (GLCM) and submarine launched (SLCM) cruise missiles. We are also improving the capabilities, survivability and safety of our combined worldwide NSNF and its supporting command, control, communication and intelligence systems.

At the same time, NATO has decided that it can meet the requirements of deterrence and defense with fewer nuclear weapons in Europe than had previously been deployed. Thus, the NATO Defense Ministers agreed in October 1983 that we would remove 1400 nuclear weapons from Europe over the next several years. Those withdrawals will be in addition to the 1000 warheads removed in 1980, and in addition to those that will be removed on a one-for-one basis for every PERSHING II or GLCM warhead that is deployed.

There is an extensive strategic cruise missile development program underway in the USSR. In addition to the previously mentioned Air Launched Cruise Missile (ALCM), the Soviets are developing sea launched and ground launched cruise missiles as well as a large number of new and modified platforms for them. To support this large effort there is a significant expansion taking place at Soviet production plants expected to produce these cruise missiles.

The Soviets continue to deploy the SS-20 ballistic missile system as well as a new generation of new and modified shorter range systems--the SS-21, 22 and 23.

Figure II-13 shows comparative trends in the total number of non-strategic nuclear warheads in NATO and the Warsaw Pact. The Soviets have been steadily increasing the number of Warsaw Pact nuclear warheads, while NATO has been slowly decreasing. After 20 years of these trends, the Warsaw Pact has roughly twice as many nuclear warheads as NATO.

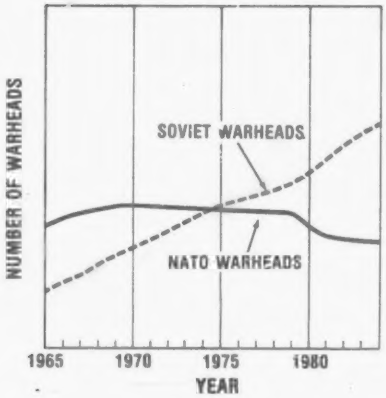


FIGURE II-13. Trends in the NATO/Warsaw Pact Total Number of Non-Strategic Land Attack and Defensive Nuclear Warheads

4. General Purpose Forces

Ground forces, tactical air forces, naval forces and mobility forces (including airlift and sealift forces) make up general purpose or conventional forces. The Soviets have continued their steadily growing program of modernization and expansion for their general purpose forces. Figure II-14 compares the total outlays for the U.S. and USSR general purpose forces. Figure II-15 shows that over the decade 1974-1983, the estimated dollar cost of the Soviet general purpose force procurement exceeded that of the United States by approximately $100 billion. As shown, we are making a substantial effort to redress the serious imbalance in equipment procurement illustrated by this spending imbalance.

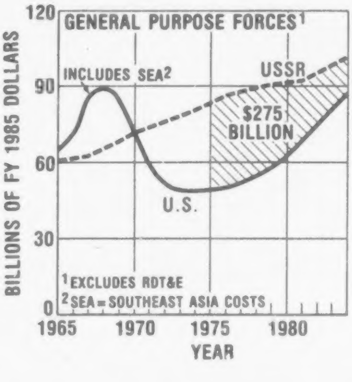


FIGURE II-14. A Comparison of U.S. General Purpose Force Expenditures with Estimated Dollar Cost of USSR Forces

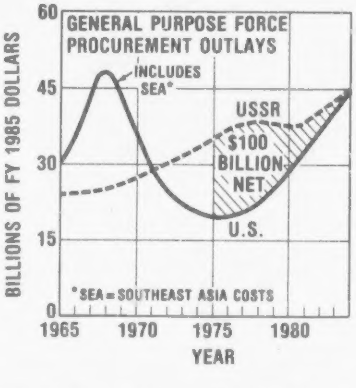


FIGURE II-15. A Comparison of U.S. General Purpose Force Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

a. Land Forces

After strategic rocket forces, Soviet land forces are most important to the Soviet Union. As a result, the ground forces are being constantly strengthened and modernized to improve their capability to fight either a conventional or a nuclear war. The Soviet ground forces are better equipped to conduct chemical operations than any others in the world and they have the largest manpower component of the Soviet armed forces.

Figure II-16 compares procurement outlays of U.S. general purpose land forces with estimated dollar cost estimates of Soviet procurement. Note the persistent long term growth in Soviet costs compared to the very large changes in U.S. spending. Table II-2 shows production of land force weapon systems, and indicates any major ten year trends in procurement quantities.

TABLE II-2. Production Summary of Selected Land Forces Systems for NATO and WP Countries

CATEGORY	1974-1983 ANNUAL AVERAGE				1983				10-YR TREND	
	USSR	U.S.	WP	NATO	USSR	U.S.	WP	NATO	USSR	U.S.
TANKS	2,370	625	2,785	1,045	2,100	900	2,550	1,450		↑
OTHER ARMORED VEHICLES	4,550	605	5,540	1,750	4,100	790	4,800	2,540		
INF./COMBAT FIGHTING VEH.	2,810	90	3,120	290	3,100	600	3,650	800		↑
ARTY, MORTARS & ROCKET LCHRS. (100 mm and over)	2,600	160	2,950	360	3,800	370	4,400	600	↑	↑
ANTI-AIRCRAFT ARTILLERY	135	0	320	1,000	50	0	275	250	↓	
SAMs* (not man-portable)	24,100	960	24,100	3,000	28,000	100	28,000	5,700		↓

*USSR and WP figures include SAMs for other countries.

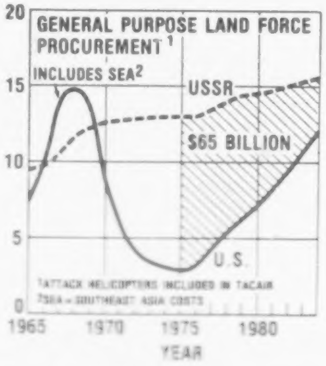


FIGURE II-16. [redacted] Comparison of U.S. General Purpose Land Force Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

The tank is a prime element of Soviet Army strength with nearly 30,000 having been produced for the Warsaw Pact in the last decade. The Soviets have expanded their production capacity at plants producing tanks and self-propelled artillery. The Soviet Union's newest tank, the T-80, is now being fielded. At the same time the Soviets are modifying some tanks already in the inventory. Their expanded production base will allow them to continue to produce tanks and artillery at a greater level than any other nation.

Since 1970 the Soviets have produced an impressive series of armored combat vehicles--an average of one new system every two years--and nine new artillery weapon systems ranging in caliber from 85 mm to a 240 mm self propelled mortar.

During the same period the U.S. developed and produced the M60A3 and M-1 tanks, the M-2 family of fighting vehicles, the M-198, 155mm howitzer, the Multiple Launch Rocket System, and the Sergeant York Air Defense Gun System. Major modifications were also made to the self-propelled 155mm Howitzer and self propelled 8 inch howitzer.

In the last ten years the dollar costs of Soviet procurement have been roughly three times the U.S. investment in ground force weapons.

b. Tactical Aviation

Soviet forces included are frontal aviation and naval aviation. U.S. forces are the tactical aviation of our Air Force, Navy and Marine Corps and the attack helicopters of our Army. Strategic defense interceptors are not included in this mission.

The Soviets have made major improvements in their tactical air forces over the last fifteen years. A new generation of fighter/attack aircraft was introduced in the early 1970s (FLOGGER, FITTER C/D, and FENCER) that enabled the Soviet tactical air forces to assume new offensive missions extending well into NATO territory. These aircraft displaced short-range FISHBED and FITTER A aircraft and now make up much of the Soviet tactical aircraft inventory. New, improved variants of these aircraft have appeared over the years, such as the FLOGGER G air-to-air fighter and FLOGGER D/J ground attack aircraft. Another generation of entirely new aircraft is about to enter service. Two are fighters, the MiG-29/FULCRUM and the SU-27/FLANKER. FULCRUM is expected to enter operational service this year, with FLANKER following later. Both appear to have much improved maneuverability over earlier Soviet aircraft and both have "look-down" radar for detecting targets at low altitudes. A new close air support aircraft, the SU-25/FROGFOOT, has undergone considerable operational evaluation in Afghanistan and may be planned for wider deployment to units in the Soviet Union. The FROGFOOT's mission is similar to that of the U.S. A-10.

The USSR has produced approximately two new series of helicopters every five years. The Mi-26/HALO A heavy lift helicopter became operational in 1982. It is about twice the size of the largest U.S. helicopter and more than doubles the Soviet Mi-6/HOOK lifting capacity. The Soviets are developing a new attack helicopter which is expected to achieve operational capability in the near future.

Figure II-17 shows the trend of estimated procurement costs for all tactical combat aircraft for the period 1965 to 1985. Figure II-18 shows the total value of these forces as measured by the sum of the initial procurement cost. The surge in Soviet procurement beginning in 1970 is caused primarily by the modernization, described above, of the fixed wing attack force, the introduction of attack helicopters and, to a lesser degree, modernization of the fighter force. It is estimated that the dollar cost (value) of Soviet procurement in tactical aviation is now approximately double that of the U.S., and has been for over ten years. Production of tactical aircraft is indicated in Table II-3. Note in particular the Soviet emphasis on the attack helicopter, and the large disparity between U.S. and Soviet attack helicopter production rates.

TABLE II-3. Production Summary of Selected Tactical Aircraft for NATO and WP Countries

CATGEGORY	1974-1983 ANNUAL AVERAGE				1983				10-YR TREND	
	USSR	U.S.	WP	NATO	USSR	U.S.	WP	NATO	USSR	U.S.
FIXED-WING										
STRATEGIC DEFENSE INTERCEPTORS	220	0	220	30	100	0	100	75	↓	
TACTICAL COMBAT AIRCRAFT	620	350	780	700	450	380	600	680	↓	
TANKERS	0	0	0	0	1	0	1	0		
ROTARY-WING										
MILITARY HELICOPTERS	570	160	750	500	480	150	630	470		
ATTACK HELICOPTERS	190	45	190	160	250	10	250	100		↓

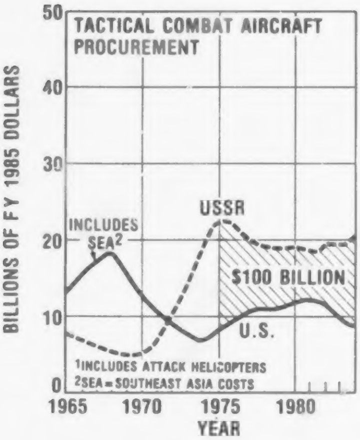


FIGURE II-17. A Comparison of U.S. Tactical Combat Aircraft Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

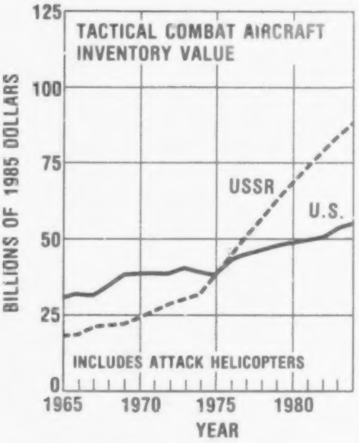


FIGURE II-18. Estimated Tactical Combat Aircraft Inventory Value of the U.S. and USSR

c. Naval Forces

Included in General Purpose Naval Forces are major surface combatants (over 900 tons), attack submarines, ASW aircraft and ASW carriers, amphibious warfare ships and naval forces directly supporting the fleets (auxiliaries).

The USSR has about 30 percent more surface combatants in its fleet than the U.S. However, overall displacement tonnage of the U.S., including aircraft carriers, is nearly 20 percent greater than that of the USSR.

The Soviet naval investment strategy differs substantially from that of the U.S. Half the estimated dollar value of the Soviet inventory is in attack submarines, whereas half the value of the U.S. inventory is distributed roughly equally between attack submarines and aircraft carriers.

Included in major surface combatants are attack and ASW carriers, battleships, cruisers, destroyers, and frigates (over 900 tons). A comparison of major surface combatant procurement costs is shown in Figure II-19. Figure II-20 shows the estimated inventory value of U.S. and USSR major surface combatants.

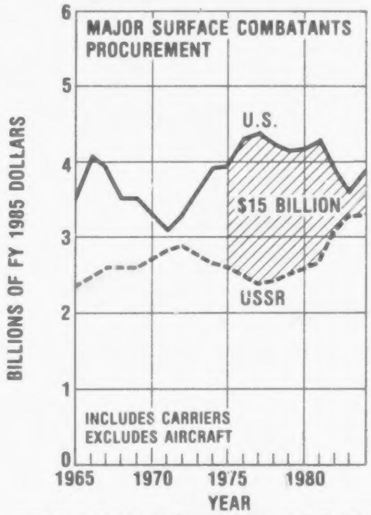


FIGURE II-19. A Comparison of U.S. Major Surface Combatant Procurement Expenditures with Estimated Dollar Cost of USSR Procurement

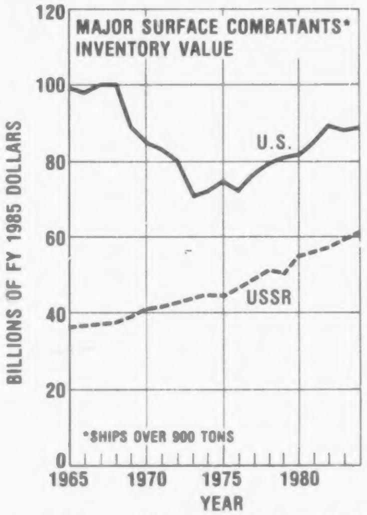


FIGURE II-20. Estimated Major Surface Combatant Inventory Value of the U.S. and USSR

Table II-4 shows naval production. Figures II-21 and II-22 show major surface combatant force size and age distribution of U.S. and USSR.

TABLE II-4. Production Summary of Naval Vessels for NATO and WP Countries

CATEGORY	1974-1983				1983				10-YR TREND	
	USSR	U.S.	WP	NATO	USSR	U.S.	WP	NATO	USSR	U.S.
	16 YEAR TOTAL									
MAJOR SURFACE COMBATANTS (900 tons and over)	91	83	107	172	9	12	12	21		↑
MAJOR AMPHIBIOUS SHIPS	22	5	33	9	2	0	2	2		
BALLISTIC MISSILE SUBMARINES	34	3	34	6	1	1	1	1	↓	
ATTACK SUBMARINES	69	30	69	62	7	4	7	7		
	ANNUAL AVERAGE									
NAVAL MISSILES										
SAMs*	2,000	550	2,000	1,250	3,200	1,100	3,200	1,750	↑	↑
SSM	200	150	200	150	300	240	300	240	↑	↑
ASM	240	100	240	100	200	50	290	50		↓

*USSR and WP figures include SAMs for other countries.

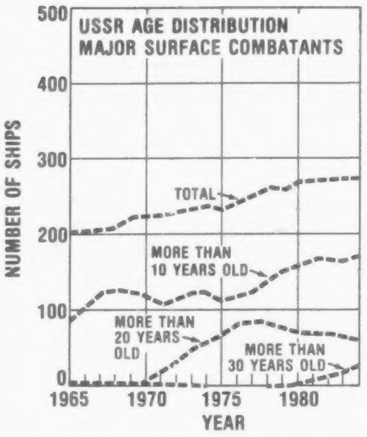


FIGURE II-21. Age Distribution USSR Major Surface Combatants

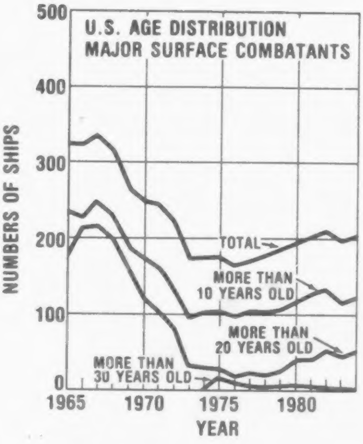


FIGURE II-22. Age Distribution U.S. Major Surface Combatants

Soviet construction of general purpose naval ships increasingly emphasizes large, sophisticated ships capable of sustained deployments in distant areas. These ships--such as the KIROV class nuclear-powered guided missile cruisers and the OSCAR class nuclear-powered cruise missile submarines--pose an increasing threat to our naval surface forces, even though the Soviets have currently built only a small number of these new type ships. Current Soviet major surface combatant construction programs include KIROV class nuclear-powered cruisers, SLAVA class conventionally-powered cruisers, the SOVREMENNYY and UDALOY class destroyers, and GRISHA class light frigates. The second unit of the KIROV class--the largest cruiser type ships in the world--will be operational this year. The lead ship of the SLAVA class made its initial out of area deployment in late 1982. This ship displaces 12,500 tons and mounts a formidable battery of 16 large SS-N-12 antiship cruise missiles. Few additional units of the size of the KIROV or SLAVA are expected, priority being given to destroyer and frigate types. The U.S. now produces three classes of surface warships, one class each of attack and ballistic missile submarines and one type of aircraft carrier.

Until approximately 1977, dollar costs of Soviet Union and the United States nuclear attack submarine (SSNs) were estimated to be similar. Since then the dollar costs for Soviet SSNs are estimated to be significantly higher than U.S. outlays. Construction continues on the VICTOR-III class nuclear-powered attack submarines, though this class may be approaching the end of its production run. Two of the huge new OSCAR class nuclear powered cruise missile submarines (SSGN) are afloat, the first launched in 1980 is now operational. These ships displace 12-14,000 tons submerged and carry 24 of the long-range SS-N-19 antiship cruise missiles. Two entirely new nuclear-powered attack submarines were launched in 1983. One, designated the MIKE class, is larger than the CHARLIE/VICTOR classes but smaller than the giant OSCAR class. The second unit, designated SIERRA class, is more nearly comparable to the CHARLIE/VICTOR classes in size, and may be intended for a large production run during the 1980s. During the 1980s, Soviet procurement of SSNs is expected to average about double that exhibited in the 1970s. Further, the Soviet dollar costs of diesel submarines are estimated to be an additional $0.7 billion/year. The new KILO class diesel-powered attack submarine, introduced in 1981, is now in series production.

As noted last year, the Soviets have begun construction of a mid-size, nuclear-powered aircraft carrier intended to operate conventional takeoff and landing (CTOL) tactical aircraft. The ship is projected to be completed by 1990. Precise information on the capabilities of this ship and its air group is not yet available, but we anticipate that it will roughly equate to our MIDWAY class in size, and will carry modern fighter aircraft incorporating the latest Soviet technology. One such ship, or even a few, will not checkmate our carrier aviation strength. It probably will take the Soviets years to develop satisfactory flight deck procedures and become capable of high-intensity flight operations. Nevertheless, such naval air forces would be a major advance in Soviet ability to project military power in distant areas and could be a significant factor in regional conflicts not involving the U.S.

5. Mobility Forces

The mobility mission includes airlift and sealift, and military port operations. No Soviet military sealift force is known to exist as a separate entity from their commercial ships. The U.S. with its many overseas bases and a need to supply them by sea and by air has a greater requirement for mobility forces than the USSR. A comparison of U.S. mobility procurement outlays (shown in Figure II-23) with estimated dollar costs of Soviet activities shows that USSR costs over the most recent decade were nearly triple those of the U.S.

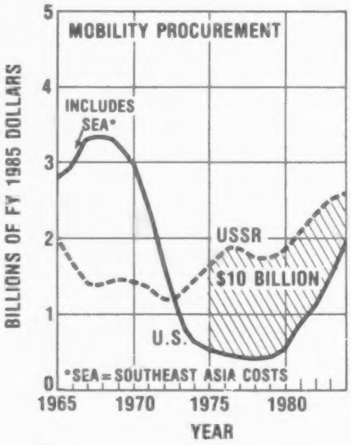


FIGURE II-23. A Comparison of U.S. Mobility Force Procurement Expenditures with Estimated Dollar Cost of Soviet Procurement

The Soviets have substantially increased the production capability for strategic airlift and transports. The expanded Soviet aircraft industry will enable them to build moderate numbers of their new heavy air cargo carriers which are similar to our C-5. Additionally, continued production of IL-76 (similar to C-141) and IL-86 transports will provide Soviet transport aviation a greatly increased military airlift capability by the late 1980s.

We are planning to improve the U.S. airlift capability by procuring additional C-5 transports. Research and development has begun on a new heavy lift transport, the C-17, that when deployed will provide our fleet with increased flexibility. An additional 44 KC-10 tanker/cargo aircraft are also being procured to support our airlift fleet. Sealift is being increased by the addition of 21 roll-on/roll-off supply ships, and increasing the ready reserve force to 77 ships.

6. Space

The Soviets attach great importance to their space program. In the past five years the USSR has launched approximately 500 spacecraft. Figure II-24 compares the number of U.S. and USSR annual launches. The total weight of the Soviet payloads put in orbit annually (660,000 pounds) is ten times that of the U.S. On any given day, the number of active satellites (110-120) in orbit from each country is about the same. More than half of Soviet satellites serve military purposes. Some 85 percent of all Soviet space launches are exclusively military or joint military/civilian missions. With the development and employment of an anti-satellite weapon, the Soviet Union clearly signaled its recognition of space as a potential hostile arena.

Figure II-25 compares estimated total military and civilian space program dollar costs for the U.S. and USSR.

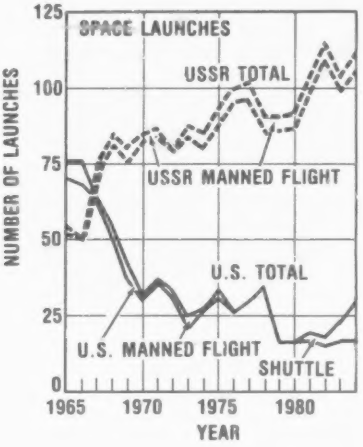


FIGURE II-24. Annual Number of U.S. and USSR Space Program Launches

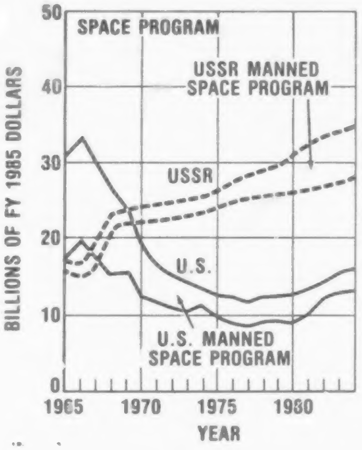


FIGURE II-25. A Comparison of U.S. Space Program Expenditures with Estimated Dollar Cost of USSR Space Program

The Soviets are expected to significantly increase the resources for new space facilities and systems. We expect the overall cost of the Soviet space program to roughly double in the eighties. Approximately twenty percent of the dollar costs for Soviet activities will be for an expanded manned effort. Major investments are now being made for production of large, new boosters, new large space stations, and a reusable space transportation system. We also expect an enlarged lunar and planetary program, as well as improved space based military capabilities.

D. MILITARY TECHNOLOGY BASE

Earlier in this chapter it was shown that dollar estimates of Soviet programs for military RDT&E have been steadily increasing and are currently nearly double those of the United States. Comparison of Tables II-5 and II-6 vividly indicate that we need to improve our exploitation of basic technology in translating it into deployed military capabilities.

Table II-5 compares the 20 basic technologies that have the greatest potential for significantly improving military capabilities in the next 10 to 20 years. This table indicates that the United States has maintained its lead in most of the basic technologies critical to defense, although the Soviets are eroding the lead in many of the basic technologies where the U.S. now leads. It is essential that we maintain our technological lead in order to somewhat offset the great disparity in quantity of deployed equipment.

Table II-6 compares the technology level reflected in deployed weapon systems. It should be noted that these assessments are technology level only, and do not measure overall force or weapon effectiveness which is highly dependent on other factors such as doctrine, tactics, training and numbers deployed. For example, although the U.S. and USSR are assessed as being technologically equal in most land force systems, the greater number deployed by the Soviets results in their having an overall superiority. The table shows, in aggregate, roughly the same level of deployed technology in strategic and land forces, with the U.S. superior in our naval and C^3I deployed technology level. However, the number of arrows tending toward Soviet equality or superiority is a matter of concern.

Even though the U.S. maintains its preeminence in most basic technology areas, its technology lead in deployed systems is steadily being eroded because the Soviets have become capable of routinely deploying new and improved weapons at high production rates with IOCs closely following U.S. comparable systems IOCs. Consequently, the number of years the U.S. could maintain a technical advantage upon deployment of a new U.S. system has been markedly reduced.

TABLE II-5. Relative U.S./USSR Standing in the Twenty Most Important Basic Technology Areas*

BASIC TECHNOLOGIES	U.S. SUPERIOR	U.S./USSR EQUAL	USSR SUPERIOR
1. AERODYNAMICS/FLUID DYNAMICS		X	
2. COMPUTERS AND SOFTWARE	←X		
3. CONVENTIONAL WARHEAD (Including all Chemical Explosives)		X	
4. DIRECTED ENERGY (Laser)		X	
5. ELECTRO-OPTICAL SENSOR (Including Infrared)	X→		
6. GUIDANCE AND NAVIGATION	X→		
7. LIFE SCIENCES (Human Factors/ Genetic Engineering)	X		
8. MATERIALS (Lightweight, High Strength, High Temperature)	X→		
9. MICRO-ELECTRONIC MATERIALS AND INTEGRATED CIRCUIT MANUFACTURING	X→		
10. NUCLEAR WARHEAD		X	
11. OPTICS	X→		
12. POWER SOURCES (Mobile) (Includes Energy Storage)		X	
13. PRODUCTION/MANUFACTURING (Includes Automated Control)	X		
14. PROPULSION (Aerospace and Ground Vehicles)	X→		
15. RADAR SENSOR	X→		
16. ROBOTICS AND MACHINE INTELLIGENCE	X		
17. SIGNAL PROCESSING	X		
18. SIGNATURE REDUCTION (Stealth)	X		
19. SUBMARINE DETECTION	X		
20. TELECOMMUNICATIONS (Includes Fiber Optics)	X		

*1. The list is limited to 20 technologies, which in aggregate were selected with the objective of providing a valid base for comparing overall U.S. and USSR basic technology. The list is in alphabetical order. These technologies are "on the shelf' and available for application. (The technologies are not intended to compare technology level in currently *deployed* military systems.)

2. The technologies selected have the potential for significantly *changing* the military capability in the next 10 to 20 years. The technologies are not static; they are improving or have the potential for significant improvements; new technologies may appear on future lists.

3. The arrows denote that the relative technology level is changing significantly in the direction indicated.

4. The judgments represent consensus within each basic technology area.

TABLE II-6. Relative U.S./USSR Technology Level in Deployed Military Systems *

DEPLOYED SYSTEM	U.S. SUPERIOR	U.S./USSR EQUAL	USSR SUPERIOR
STRATEGIC			
ICBM		X →	
SSBN	X		
SLBM	X →		
BOMBER	X		
SAMs			X
BALLISTIC MISSILE DEFENSE			X
ANTI-SATELLITE			X
CRUISE MISSILE	X		
TACTICAL			
LAND FORCES			
SAMs (Including Naval)		X	
TANKS		X	
ARTILLERY		X	
INFANTRY COMBAT VEHICLES		X	
ANTI-TANK GUIDED MISSILES		X	
ATTACK HELICOPTERS (VTOL)		X	
CHEMICAL WARFARE			X
BALLISTIC MISSILES		X	
AIR FORCES			
FIGHTER-ATTACK AIRCRAFT	X →		
AIR-TO-AIR MISSILES	X		
PGM	X →		
AIR LIFT	X		
NAVAL FORCES			
SSNs	X →		
ANTI-SUBMARINE WARFARE	X →		
SEA BASED AIR	X		
SURFACE COMBATANTS	X →		
NAVAL CRUISE MISSILE		X →	
MINE WARFARE		X	
AMPHIBIOUS WARFARE	X →		
COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE			
COMMUNICATIONS	X →		
ELECTRONIC COUNTERMEASURES/ECCM	X		
EARLY WARNING (Includes Surveillance & Reconnaissance)	X		
TRAINING SIMULATORS	X		

*1. These are comparisons of system technology level only, and are not necessarily a measure of effectiveness. The comparisons are not dependent on scenario, tactics, quantity, training or other operational factors. Systems farther than 1 year from IOC are not considered.
2. The arrows denote that the relative technology level is changing significantly in the direction indicated.
3. Relative comparisons of technology levels shown depict gross standing only; countries may be superior, equal or inferior in subcategories of a given technology in a deployed military system.

DEFICIT REDUCTION PACKAGE

Senator **RUDMAN**. Thank you very much, Dr. De Lauer. I think you have made a very fair presentation of your argument and a very persuasive one.

Having said that, let me really start with what is essentially a general question, which I would hope you might be able to answer in some way. It is no secret that over the last week there have been some very intensive discussions going on between members of the Senate and people representing the President to try to construct a deficit reduction package that would have some meaning, because if there is one thing that most people agree on up here it is that we really have to do something this year, that we cannot have business as usual just because it is an election year. We have to do some difficult things, right or wrong.

One of the political realities faced by those people negotiating is at what number the defense budget will finally reflect itself in our budget resolution, which of course is then binding on this committee. The numbers vary.

This morning's reports in the press do not give any numbers, but my own information is that we are quite a way from the 13 percent at this point. And whether it ends up 5, 6 or 7 or 7.5 percent is a matter of conjecture, but obviously it is going to be less.

That has nothing to do with the merits or whether that is right or wrong. It has nothing to do with whether or not, in light of the threat we face, this budget ought to be approved as submitted. It has to do with the realities, which some of us disagree with some of the numbers. But that is what we will be faced with.

This committee is going to be faced with some rather difficult decisions. With that preamble, we do not really expect you to offer up specific cuts in your R&D budget, but if in fact stiff reductions are imposed by the budget resolution and we are working within severe limitations, could you give us some suggestions on what budget activities you think might take the hardest hits?

Can you give us any priorities on that general level? You will have to do it sooner or later. You might at least help to give us some guidance this morning.

That would have been the chairman's lead-off question and it is also mine.

Dr. **DE LAUER**. I know. You act as the chairman very well. It almost sounds the same if I close my eyes. [Laughter.]

Senator **RUDMAN**. Well, let us just say I have come under his strong influence, Dr. De Lauer.

ADMINISTRATION-PROPOSED BUDGET

Dr. **DE LAUER**. Well, I do not like to do anything but be responsive, but you know, Mr. Chairman, that these discussions are going on. The fact of the matter is that it is a presidential initiative. The fact that he has asked for a group to try to figure out what he has called the down payment on the deficit. I think it is going to depend clearly on what kind of guidance we get out of the President as to what our actions are going to be.

There is no question that this is his budget. Until he changes it, we are here to support it. And I do not think it would be proper for me to, in the absence of any direction, give you anything other than what I consider what-ifs. As I pointed out in my opening statement, there are only three places you can cut: You can cut force structure, modernization, or operation and maintenance. That is where it is.

The personnel costs, which would be one you would cut, would be very hard to do in a year's time. You could delay some buildup, but we are not planning buildup in personnel, very little. So it has to be either in force structure or in the modernization program or essentially those parts of the budget on O&M. Those are the only three places you can get the cut.

FORCE STRUCTURE

Let's take a look at them one at a time. Force structure is probably the quickest way, at least from a decision standpoint, because it has the greatest leverage. You are just not going to have that many divisions or that many ships.

As far as having a near-term impact on the budget, it is problematical. You could take ships out of service, you can take divisions out of service, and you can take some of the aircraft and transfer them to the Guard or other things that are not in an operating sense. You could save money in the near term.

MODERNIZATION

Modernization is even tougher. Most of the money that is being asked for in the 1985 budget has two characteristics: one is to buy a certain number of aircraft, a certain number of ships, or a certain number of pieces of equipment for the Army for delivery, probably 2 years from now. So if the budget would preclude budget authorization, in other words obligation authority, but as far as outlays are concerned it would not hae much effect in the near term.

O&M

Now you come to the question of O&M. As you know—we have been there—O&M is the quickest thing to cut, because those are the consumables. Those are the things, you will have less steaming hours, less training time, less joint exercises, those are the things that consume outlays in the current year.

But as far as the budget authority is concerned, then you can start talking about force structure. If you are interested in cutting TOA, then that would be in force structure. If you are interested in talking about outlays, then you probably have to cut O&M.

Senator **Rudman**. Well, having said that, obviously your answer, of course, is accurate. We know that from having to go through some of these exercises.

But the real question I suppose is, with the combined areas of research, development, acquisition acitivities for 1985, where they comprise 46 percent of the budget, it is $141.6 billion. Of that $7.2 billion increase in R&D and $21.6 billion in procurement, understanding the correctness of the statement you have just made, I guess what we are saying to you is—and I will not press, because I understand the position you are in, but—are you prepared, from those who are responsible for managing this defense budget—are you prepared if in fact we come up next week or the week after or 3 weeks from now with a number?

Are you starting to work in your own shop on some guidance for this committee of where within the parameters, within the three major areas we speak of, that we can do the least damage, if you will, in making those reductions?

Dr. **De Lauer**. Yes, we are doing some what-if's. We always do. Experience has told us in the last 2 years that Congress has not enacted the budget we asked for, so we have had to do it.

Now, we have had a lot of help. Congress from this half of the process at conference in the appropriations process, modified some 823-odd programs last year, everything from "do not buy a 9 millimeter handgun" to restrictions on increases on M-1 tanks and restrictions in other areas.

Senator **Rudman**. I would submit to you, Dr. De Lauer, that the reason you got that much help—and I assume you put that in quotes—is because we did not get enough guidance early on to get the kinds of things that you would have liked to have done. I will not go through that rather sordid history of last year's rather famous breakfast, but you know what we are talking about.

Dr. **De Lauer**. I was there.

Senator **Rudman**. So I guess what I am suggesting, and I know the chairman will certainly suggest this, is that we will want to work very closely. We obviously want to get the most bang for the buck.

Now, on the next subject, the question is really—this is a very difficult question, because we all know the political constituencies that we all know are marginal, that are running into trouble. Without really derailing overall modernization, how about putting more money into things that are working and less into things that are problematical?

I am waiting for someone to sit across the table and tell me we ought to kill this program. The only one I know of that we killed recently we did ourselves. And after the fact people said we were right, including you.

So when is someone going to come up here and sit and say, that is a turkey and we ought to go drop it? Now, the argument, well, we have only sunk $8 million into it, it is a turkey but let us put in another $2 billion, that does not wash.

Dr. **De Lauer**. Mr. Chairman, one guy's turkey is another guy's Thanksgiving dinner. You know that.

Senator **Rudman**. Well, let me tell you, you get some ptomaine poisoning on some of those dinners.

Dr. **De Lauer**. I can agree to that.

Let me just also tell you that this budget was not put together without a lot of blood on the floor. In the process of the review, we essentially killed 68 programs.

MAJOR PROGRAMS REDUCED

Senator **Rudman**. Were any of those major programs fairly far along in development?

Dr. **De Lauer**. Some were.

Senator RUDMAN. Could you cite those?

Dr. DE LAUER. The antiarmor cluster munitions program was reduced. That is pretty well along in development. We chopped some of that out. I can give you a list.

We cut the Cobra down. We cut almost one-half billion dollars out of the light armored vehicle [LAV].

Senator RUDMAN. But we are still going ahead with these?

Dr. DE LAUER. No. In this budget it is just enough to buy the LAV for the Marine Corps, nothing for the Army, as you well know. You followed it very closely. It is completely out.

The close combat laser assault program was cut over $200 million. We changed the multiple application core engine. that is in the powerplant area, by almost one-half billion dollars. That is what the savings would have been.

The antiarmor munitions that I was talking about were taken out over the program period. That is worth $1 billion.

We reduced the KC-10 buy. We reduced the E3A aircraft buy. That is the AWACS. I have got a list of things that almost add up to $1 billion. There were some major things.

No strategic modernization programs were killed. This area has been a No. 1 priority and we will not kill that. That is the President's No. 1 priority.

LAV

Senator RUDMAN. Just to follow through on that to see if we could have an understanding on it, let us take the first argument you quoted, the light armored vehicle. I think the committee would like to know what is really going on with that, because the Army pulled out of that. That is fine. General Kelley told me, though, the other day, that they need it, they like it, they want it, their mission is different.

And I have great regard for the Marines, General Kelley, and I think if they need it and they are a small service, we probably ought to let them have it. But now we hear that the Army is working on another light armor system of their own, and the Air Force is trying to get into air based defense with the 30-millimeter gun that will have to go on some kind of a vehicle.

Well, I guess what I am asking is, who is coordinating this and who is in charge? Are we going to be ending up 3 years from now sitting across from you and saying, why do we have three vehicles, all with different armament, run by the three services, having great similarities in need? We are spending more money in the R&D base. Who is going to coordinate this stuff?

Dr. DE LAUER. I am supposed to coordinate it, but I am not in charge.

Senator RUDMAN. That is true. I think that is probably the most important thing to be said at this hearing this morning——

Dr. DE LAUER. It is the reality.

Senator RUDMAN. In terms of what the problem is.

Dr. DE LAUER. Part of it is; yes. But on the other hand, I think this administration has done more to try to make the 5-year development plan, and therefore our budgets, more coherent from year to year than any other administration in the last 20 years. I have been in this business that long. I have participated in the Defense Science Board for over a decade.

We have been reasonably careful. We do not let them start a program if they have not funded it out to the full 5-year period, as you know. JVX was a perfect example of that. We made them step up to the fact that they were going to commit to participate in that program, maybe not in dollars right now, but they have got a commitment to it.

We are trying to do it. The hardest ones are joint programs. But we will not let the services start a program—and many of these I listed were put off for that reason—just because they did not have the money in the out-years to do the job.

During the summer DRB deliberations, we fought those battles. We fought the battles long and hard. TAC follow-on forces, for example, was one that was fought very hard in regard to putting the money in the 5-year plan so that we don't start JTACMS and JSTARS and not have the service implement them.

We stopped programs that did not have the money in them, particularly some of the munitions programs that just got started, if there was no funding whatever in the out-years. We stopped those cold.

On the other hand, there are some arguments. Our job is to allocate the resources. Your job is to make sure that we do and provide us the ability to go do the job once we have decided what should be bought.

UNDERFUNDING OF 5-YEAR PLANS

Senator **Rudman**. To followup on that answer, as you are well aware, GAO says—they have a study which says that, among other things, your 5-year plans have rather consistently been underfunded at the Department. Now, let us look at it two ways, retrospectively and prospectively. I think quite often when we ask questions around here we do not make that distinction.

Would you agree in retrospect—I guess you would almost have to, from the facts—that they have been underfunded? As you look, generally each 5-year plan has been underfunded for a variety of reasons?

Dr. **De Lauer**. They have been underfunded in the fact that they have, in a 5-year plan, led to the planning that they are going to buy things in the fourth and fifth year that never got past the second year. The worst is in the munitions area.

ADEQUACY OF 5-YEAR FUNDING PLAN

Senator **Rudman**. Do you think that is now looking better? Looking prospectively, do you think that your submission to us, your 5-year, is realistic? You think it is adequately funded?

Dr. **De Lauer**. I think it is adequately funded for the programs, probably not adequately funded for the inventory objectives. I think—you know, you asked me what I thought could be the thing that could be modulated the best—it is inventory objectives, particularly in the area of munitions.

If you look at our 5-year plan on munitions, we have a 5-year low wave. Much of it is in the fourth and fifth year, for the purpose of providing essentially a 60-day sustainability capability. Well, we have just never been able to match that in a decade.

We are getting better. The plans say we are improving. We are on an up slope on munitions. We have established out of lost summer's activities, a munitions council.

MUNITIONS COUNSEL

Senator RUDMAN. You are the chairman of that. I was going to ask you about that. What is the munitions counsel and what are your objectives? What do you try to do?

Dr. DE LAUER. The munitions council is an exercise in futility, to start with. [Laughter.]

But that does not mean it has to stay that way. My purpose was to get this thing going. I suggested to the Deputy Secretary that we get it together because, as I pointed out, if you look at the plans, there is $100 billion in 5 years in the budget.

Now, we can examine that carefully. If I can make a 10-percent saving, that is all the money we are talking about in some of these.

The other is the mix. I have been unhappy with the fact that we are having these emerging technologies starting to show up, yet when you look at the mix of modern munitions, as I call it, as against nonmodern munitions, the mix is bad. We are planning to spend more for iron bombs than for some of the stuff we are developing.

If we are going to develop it, we ought to plan to put it in the inventory. If we are not going to plan to put it in the inventory, there ought to be a reason for it and get it out of the inventory. That is the reason for the council.

Unfortunately, we are in the process of trying to change the culture. None of the services is looking at their munitions needs in the same way. The Air Force and the Navy, particularly in air munitions, use a different base for the amount they are going to buy and a different effectiveness of the munitions themselves versus the Army.

Utilization criteria. How fast do you fire them, and therefore what is the inventory requirement? It varies. There is no base. So what we have been trying to do in the munitions council is to put some substantive, analytical and judgmental criteria into some of these decisions, and we are looking at what should be the base.

Let me give you an example. I am not saying this is a good example, but it is one that was done. We did not ask the Air Force. We actually asked the people in the OASD (MIL) area. They did the study. They are the ones that had to look at the requirements.

They found that if you attacked a fixed target—this happened to be a ridge in central Europe—with F-16's with iron bombs on it and then attacked it with the F-16's with IIR Maverick, that you have got a leverage of 24 to 1, 1 airplane dead against 24 airplanes dead. I do not know whether that is the leverage, but it is probably someplace in between.

The hard part is, the people who buy munitions do not trade off with the platforms, and we are trying to do that. That is really the basis of the munitions council: To get some rigor and some character as the basis for estimating the munitions requirements and inventory objectives.

Senator **Rudman**. The implication is that what you have done heretofore is not really the preferred means to define and to achieve inventory levels.

Dr. **De Lauer**. That is right, and it is not clear that what was good for one is good for another. For example with the 155-millimeter munitions, you start talking about things like Copperhead, replacing 155-millimeter munitions.

STRATEGIC DEFENSE INITIATIVE

Senator **Rudman**. Let me go on to some specifics here. I think that is a good general exchange. I think you know what the committee is trying to do and what we are going to probably have to do.

We are going to move on to the Strategic Defense Initiative (SDI), the so-called Star Wars technology. You are requesting $1.8 billion for that program. It is an increase of $800 million. What is the out year R&D projection now projected for this investment?

Dr. **De Lauer**. We do not know what the programmatic totals work out to be. It is about on the order of $24 billion.

Senator **Rudman**. Twenty-four billion dollars over the life of the program?

Dr. **De Lauer**. Up through 1989, yes.

Senator **Rudman**. When will we have a better grasp of exactly what the state-of-the-art is, what we will be able to deploy, what kind of strategic defense we will be able to deploy? When will you know what the cost will be to reach that preliminary point? What will the cost be?

Dr. **De Lauer**. My estimate is within 2 years we will be able to pick the technology so that we can give a demonstration. That is what is in the $24 or $25 billion. It is an estimate that there will be some demonstrations that will be relatively expensive.

We will have gotten to the point where we can have a demonstration program, or we have gotten to the point where we can get the elements of the thing, that is, which is the hardest, what is involved in the whole question of the battle management aspects of it. This is all before the buying of the sensors and things.

I would say within the 5-year period you would know whether or not the strategic defense initiatives should be deployed as an element of the force structure, in that 5-year period. So take that kind of time and—primarily it is time. It just takes a lot of time to get there things developed.

LAYERED MISSILE DEFENSE

Senator **Rudman**. Rand has estimated, and others I guess, that the 24-year cost will be in the vicinity of hundreds of billions of dollars for developing and deploying a layered missile defense. Do you agree with that?

Dr. **De Lauer**. I do not know about 100, but I have testified before to the fact that we spend about 14 percent, at least for the strategic modernization program. By the time we are ready to go, we will have modernized our bomber force, our C^3I and other strategic forces.

And if you have 14 percent, let us just assume that the budgets are around, in 1984 dollars, $300 billion. Fourteen percent of that represents about $40 billion a year, maybe $42 billion. You do that for 20 years and that will do it. But that is what we are spending now.

In the 10-year period from 1981 through 1990, we will have spent that amount of money for strategic modernization approximately. About $30, $35 billion a year for 10 years is $300 billion. That is what we would be spending. That is what you now have approved and we are well embarked on it. We are embarked on it, a third of the way. So to me that is a lot of money.

Senator **Rudman**. I think it is to anyone.

Dr. **De Lauer**. But it is not unreasonable.

Senator **Rudman**. It may not be unreasonable, but the real question is what other choices can we make.

Dr. **De Lauer**. That is right. That is why I focused it only on the strategic portion of the defense budget, and I did not say, look, it impacts in the conventional forces or anything like that. I focused right here on what we are doing.

You do not like 14 percent? Take 10 percent, and over a 10-year period that is $300 billion.

NATO EMERGING TECHNOLOGIES

Senator **Rudman**. I want to just move on to the NATO emerging technologies area that you have addressed yourself to. What do you estimate to be the overall cost of the NATO conventional modernization initiative? Can that be answered at this time?

Dr. **De Lauer**. I do not have that at this time. It really depends on the rate of investment by our allies. I think that in our case, you know, we are spending most of our money in the conventional area, really. And it is a rate that we can introduce some of these modern things.

I think we will not be able to deploy the JSTARS, which is the beginning of the surveillance and battle management aspects, until about 1987. Then after that will come some of the modern munitions, the clustered munitions, and the JTACMS platform. That will come in in 1985 to 1989.

Hello, Chairman Stevens.

I really cannot give that to you, because it dependes wholly on how fast we can get into the force structure. That is where the money is, not in the R&D.

Senator **Rudman**. Mr. Chairman, we have been through a number of questions with Dr. De Lauer. You might be interested, after my opening question, which asked him to try to prioritize some of the inevitable cuts we are going to have to make, and the way the question was phrased the witness indicated that had he closed his eyes he might have indicated the chairman was actually speaking.

So why do you not proceed, Mr. Chairman.

Dr. **De Lauer**. He is a good substitute there, Mr. Chairman.

Senator **Stevens**. He is, he is.

Senator **Rudman**. Why do you not proceed if you would like.

Dr. **De Lauer**. But he has not quite gotten to the point where he scares me as much as you do, but he is learning. [Laughter.]

Senator **Rudman**. I doubt I will ever get to that point, Dr. De Lauer. [Laughter.]

Senator **Stevens**. I am just still stunned from the meeting I was in.

Dr. **De Lauer**. Maybe I ought to ask you a question, Mr. Chairman. [Laughter.]

So I know what I am supposed to be doing today.

Senator **Stevens**. Watch the reaction on his face and we will just see here.

I am sorry to have missed the beginning. We are still in on the budget discussions. In terms of those discussions, we are looking pretty hard at some questions in R&D, and maybe I can just go to some of those.

You have a real growth rate in R&D of 20 percent, as I understand it, this year. And we are looking at questions of what portion of the defense budget would bear a brunt of reductions that may be made in this process of the overall budget.

NEGATIVE STARTS IN R&D

What would happen if we put you on a basis of no new starts in R&D?

Dr. **De Lauer**. No new starts?

Senator **Stevens**. I thought that would get your attention.

Dr. **De Lauer**. Gee. Let me tell you, that is an easier one to answer. I can handle no new starts probably easier than any one single element of our program and let me tell you why. The new starts we have are not very many. There are only about five: The DD-51, the new sub; the airlift. The C-17 has been low. Really, this is the first step up to it.

I think there are only five major programs for new starts. I think we would be able to handle them better than we could a program that is well on its way and we are in the process of finishing up the development and getting into production.

REAL GROWTH IN R&D

Senator **Stevens**. According to my notes, when we reduced R&D by $1.6 billion in 1983 and $1.7 billion in 1984, we were looking to a restructuring of the R&D area without disrupting the modernization initiative. And I am not going to try to put to you questions that would deal with commitments, Dr. De Lauer, but have you ever looked at the chart to see what would happen as we come down in terms of this year's budget authority?

You are at 18-percent nominal growth. What is your real growth figure?

Dr. **De Lauer**. My real growth figure, 13.7.

Senator **Stevens**. I am corrected. My notes are in error. It is 20 percent real growth.

Dr. **De Lauer**. Real growth is 21.9 percent in TOA in RTD&E, Mr. Chairman.

Senator **Stevens**. That is substantially above the average of the Department of 13.5 percent.

Dr. **De Lauer**. That's right. Let me give you some historical numbers. In 1983 we did not get as much in RTD&E. We had $9.3 billion then. In 1984 we only got $12.5 billion. So this was a makeup. I mentioned that in my opening statement.

Part of this had to do with the fact that when the authorization and appropriation bill was passed last year, most of the cuts were taken in RTD&E and some procurement, because that was the only place you could do it. You could not do much in the personnel costs that represented 42 or 43 percent of the total budget. So you took most of the cuts there, and that is why it is unbalanced in regard to the overall budget of 13.7 percent.

STRATEGIC DEFENSE INITIATIVE

Senator **Stevens**. You have already discussed, I take it, before I arrived the strategic defense initiative?

Dr. **De Lauer**. That is right, the $1.8 billion, yes, sir.

Senator **Stevens**. How much is that increased over last year?

Dr. **De Lauer**. About $600 million to about $1.2 billion. But the——

[Buzzer rings.]

Dr. **De Lauer**. Is that a break?

Senator **Stevens**. That is an interesting thing. That is normally a vote. But when you start off, that is the way they get your attention.

Dr. **De Lauer**. In the line elements what is now focused as strategic defense initiatives, we had about $1.2 billion last year, in 1984. This is what we are spending this year. Those programs themselves, when we projected them out in the summer program, before the President told us what the budget was going to be, that represented about $1.55 billion. We had an increase from $1.2 billion to about $1.5 billion.

At that time he said: Look, this is the initiative we want. He added about $250 million to that thing and got us up to the $1.8 billion. That does not include the $220 million allocated for DOE.

Essentially, we had two steps in it. It went from about $1.2 billion to $1.55 billion, and from $1.55 billion to about $1.8 billion. It came out of the President's initiative, with a little more focus. We had about a 25-percent increase to start with and now have close to 33 percent.

Now, there has been a restructuring of that program for the program elements, Mr. Chairman. The overall funding has been the same, up to $1.8 billion. We have restructured within the five program elements to concentrate on some of the things that the Fletcher Committee came up with: Do not do this, do this. That is starting to happen in 1985.

In 1984, we are finishing up what we did, particularly in what I would call endoatmospheric terminal defense.

NATO EMERGING TECHNOLOGIES INITIATIVE

Senator **Stevens**. What is the NATO emerging technologies initiative? You mentioned it in your statement, I am told, and I was not here when you made it. But what would be the cost of that modernization initiative as far as NATO is concerned?

Dr. De Lauer. I think it is critical we deploy the things that we are going to be developing in this particular budget. Two major items we will be developing in this budget are the JSTARS radar, the joint acquisition radar, and the JTACMS delivery system.

Now, the JTACMS delivery system is the one in which we use the clustered munitions primarily as the No. 1 thing. That has been under development and is now under contract.

That will be delivered by some form of standoff capability, either a cruise missile or a ballistic missile of some kind. The big procurement of that will have to come in 1986, not in 1985.

[The information follows:]

Combined Effects Munition

The Air Force is procuring the Combined Effects Munition, which consists of Combined Effects Bomblets carried in a Tactical Munitions Dispenser. The Combined Effects Munition is carried and dropped from aircraft. The Air Force is planning a buy of 10,446 Combined Effects Munitions in FY 85 and increasing this to 26,240 in FY 86. The Combined Effects Bomblets could also be packaged into a ballistic or cruise missile dispenser.

MISSILE TEST BEDS

Senator Stevens. I am looking at Defense Daily. You told the other committee that JTACMS has not been chosen. The Air Force is looking at possible use of a separate missile from the one chosen by the Army. And are there two test beds rather than one now?

Dr. De Lauer. Except that it is not really a test bed. If the Army selects a ballistic missile, it will be essentially one already developed. It will be the T-16 or the T-22 missile. That is already developed, so it's no development program for that. It will essentially be the procurement and the platform.

In the case of the Air Force, we canceled MRASM. That was one of the programs we canceled in the last few years. They are looking. They have done enough studies to indicate that for them to have a viable program the missile costs have to be under a quarter of a million dollars. They cannot afford, with their inventory objectives, to have the missile cost them more than $250,000.

So what we have been looking for is low cost things. I have also been looking at higher survivability or greater effectiveness, so that our inventory objectives will not be so high.

Senator Stevens. These are basically for NATO, now?

Dr. De Lauer. NATO's threat.

HAS NEED FOR TWO WEAPONS SYSTEMS

Senator Stevens. General Rogers issued a statement for need for both weapons systems?

Dr. De Lauer. Has he issued a need? I do not know if he has issued one. He certainly supported our program when we discussed it with him, and when he has come over and presented his story to the DRB. And as a matter of fact, that is absolutely true. Of course, the first thing is he wants to be sure that we have strategic capability.

The second thing he wants to be sure we have is the TNF, which we now have going. The third thing was other than the quality of life issues, the tactical follow-on forces. That is essentially what this program does, since it is the tactical follow-on forces.

TOMAHAWK

Senator **Stevens**. Does not the Tomahawk do that?

Dr. **De Lauer**. Only against fixed targets, not against time-dependent targets. The Tomahawk, as you know, has a guidance system that essentially goes against fixed targets. So does the cruise missile. The Tomahawk is the only one with conventional missiles at the present time.

What will happen in this case is that we are looking at a standoff capability, that is, a missile you can put on a tactical aircraft which will be around 1,600 pounds, less than 2,000 pounds, and will have a range that provides a high survivability for the platform with a guidance system that can be directed against time-dependent targets using the JTACMS radar.

That is the overall program. So it will take about 5 years to fully get the capability. We will not have that capability in the field until about 1989, 1990.

JTACMS AND JSTARS

Senator **Stevens**. Well, you have got a JTACMS request for $114.5 million and JSTARS request for $203.2 million.

Dr. **De Lauer**. That is right. The biggest money is in the JSTARS. That comes first.

Senator **Stevens**. It appears that both will follow on with substantial procurement costs in the outyears.

Dr. **De Lauer**. That is right. There is no sense going into that program if we do not buy them.

Senator **Stevens**. do you need both of them?

Dr. **De Lauer**. I think there is a difference in the mission. The Army has the mission up close, essentially the FEBA and then maybe 25 or 30 kilometers more. The Air Force picks it up at 30 to 50 kilometers and on out to mayble 150 to 200 kilometers.

Senator **Stevens**. Why cannot the NATO allies pick up one of them?

Dr. **De Lauer**. I am going over there next week and beat the table, Mr. Chairman. I have been the biggest saleman of emerging technologies that has been in the building, other than the Secretary.

I think there are two things that will force them to do it: One, that we can really show them that this has a high force multiplication factor; and two, that we transfer the technologies to them and assist them in using the money, so they do not have to spend the R&D money, and fix it so they can get jobs out.

As you know, the No. 1 priority in Europe is jobs.

Senator **Stevens**. As long as it is their money, I am happy for them to have jobs. The trouble is, it looks to us like we have got Tomahawk and now it looks like we are going to have two additional systems to attack follow-on forces.

Dr. **De Lauer**. The Tomahawk was for the purpose of attacking land targets from the Navy. It was never for the purpose of attacking ground forces in a scenario like Western Europe. That was never Tomahawk's mission. It was against coastal targets, on the land but coastal targets.

MULTIPLE CLUSTER WARHEAD

Senator **Stevens**. My staff tells me that if you put a different cluster on the warhead that you could use the Tomahawk to go after a fixed choke point, just like you could go after a fixed target, and thereby eliminate these redundant systems.

Dr. **De Lauer**. Well, you would have to either buy the Tomahawk missile or one of these. The Tomahawk missile is more expensive than what it is going to be on this other one. If we cannot make it cheaper than Tomahawk, we will buy Tomahawk.

Senator **Stevens**. But it is developed and under production; is it not?

Dr. **De Lauer**. That is right, but it is going to be an expensive missile.

Senator **Stevens**. What is the difference in cost? Do you have that difference in cost on that?

Dr. **De Lauer**. No, but I can tell you what the difference is in the JTACMS. A quarter of a million dollars piece.

Senator **Stevens**. How much?

Dr. **De Lauer**. A quarter of a million dollars apiece, $250,000.

Remember we had MRASM, which was essentially a short Tomahawk? The reason we fell off of that was that they were too darned expensive for the tactical application.

RESEARCH BY NATO ALLIES

Senator **Stevens**. Are NATO allies going into similar research?

Dr. **De Lauer**. Right now their effort is primarily on the MLRS research program for the millimeter wave terminal guidance that contributes so much to this tactical follow-on force. That is about what they are doing now.

Now, they are also in a study program, but let me tell you that they are 5 years from putting any money into something called a long-range standoff missile. They will go for a cruise missile on this one, too. They are going to go, apparently, for a winged missile. They are very reluctant to talk about having a ballistic option.

CODEVELOPMENT OF TACMS

Senator **Stevens**. Are you looking into any codevelopment of the TACMS?

Dr. **De Lauer**. Hopefully, we are not going to build them for them. Our objective is, depending on the nature of it, to have them build their own. That is our objective, and produce it in their country.

Senator **Stevens**. The substantial cost is in R&D and development, isn't it?

Dr. **De Lauer**. Not that much. Most of that is behind us. The JSTARS radar is pretty much defined right now. It came out of—remember SOTAS? Then there was the son of SOTAS and the grandson of SOTAS, and now we've got the JSTARS. We had the radar of the month club there a few months ago. I had to beat them around the head and shoulders to get rid of a few of them, which we did.

NATO AIR DEFENSE

Senator **Stevens**. What about that $250 million for the NATO air defense?

Dr. **De Lauer**. That one, yes.

Senator **Stevens**. I am told that you have some conceptual agreements on that.

Dr. **De Lauer**. That is right. What we have is an agreement with the Germans that is in the final negotiations now that they will provide us a certain amount of ROLANDS. They will man them, produce them, and they will provide them for the essentially air-based defense. We in turn will provide a number of batteries of Patriot, which they in turn will man. We will also man and maintain our own Patriots.

When it is all through, supposed to be over a 10-year period, a wash.

TURKEY-DEPLOYED RAPIER MISSILES

Senator **Stevens**. We are informed that some of the British people seem to believe we have earmarked $50 million from the NATO air defense for purchasing Rapier missiles to deploy in Turkey. Is that correct?

Dr. **De Lauer**. I think that is the case, yes. As a matter of fact, the first Rapier contingent is already in Turkey. I know Geoff Pattie, who was kind of——

Senator **Stevens**. How much have you obligated of what we've given you already? We have given you $50 million, now another $200 million. You have $250 million total appropriated?

Dr. **De Lauer**. That is right.

Senator **Stevens**. I think we believed that that program would be more coordinated in sort of a two-way street concept with the NATO people. How is it? Are they putting up any money?

Dr. **De Lauer**. They are putting up ROLAND.

Senator **Stevens**. Let us talk dollars.

Dr. **De Lauer**. In 10 years, it'll be a little over $2 billion apiece. The $200 million is only the downpayment. It will be about $2 billion apiece over the 10-year period to break even. That is the objective and that is what we are negotiating right now.

Senator **Stevens**. How much have you obligated of the $250 million?

Dr. **De Lauer**. I do not think we have obligated any.

Senator **Stevens**. Do you have a request here for additional money for NATO air defense?

Dr. **De Lauer**. In the 1985 budget it shows up in the Patriot line.

Senator **Stevens**. How much of that is for that?

Dr. **De Lauer**. All of Patriot, except for a few of them, are going into Europe. I do not think we have asked you for more money at the present time for additional Patriots. It would have to go to the Germans.

We are trying to decide how we provide essentially the 12 battery units, the 12 units that go to the Germans initially, whether we take them out of our existing program or whether we buy additional ones.

Senator STEVENS. We cannot seem to quite identify what is earmarked for NATO airbase defense. Could you give us something for the record on that?

Dr. DE LAUER. I can get you that for the record.

[The material follows:]

NATO AIRBASE DEFENSE

[Deleted.] Most, if not all, of these weapons will be used in Europe for NATO air defense. We are presently in negotiation with the Federal Republic of Germany to complete the agreement signed by the US Secretary of Defense and the German Minister of Defense 6 December 1983. Until this agreement is completed additional program costs cannot be specifically identified.

JOINT ACTION BY NATO MEMBERS

Senator STEVENS. I note with interest a comment in the Sunday paper, I believe about the British group that had advised that the NATO allies take some joint action in terms of the necessity for increasing their capabilities outside of NATO. Are you involved in that?

Dr. DE LAUER. I talk to them almost on a weekly basis. Is this the one where you say they take their own initiative outside the NATO environment, or do it within Europe themselves? They have two initiatives.

Senator STEVENS. Outside the NATO environment. And I notice they have civilians and military involved in their commission, and their commission recommended they go to other NATO allies and urge them to take a role, particularly in the Middle East.

Dr. DE LAUER. I have not been involved in that. No, I have not. That is probably on the policy side.

Senator STEVENS. Let me ask just one last question. If the numbers that I am hearing around here in these meetings I have been in are anywhere near where we need to come out, there is going to be a substantial reduction in budget authority for the Department, and a major portion of it would be assigned to this area of the defense budget.

In terms of that, one of the things that bothers me is how to protect the classified programs. Have you addressed that problem?

Dr. DE LAUER. Yes, sir. Right now, to the first order, the classified programs have been—even in the budget process—have held their own almost better than any other ones. But they will have to be examined like anything else.

Senator STEVENS. Well, that is the diffculty. If we get to a substantial reduction, and there is not a way to deal with that directly, it might end up that the classified programs would be almost immune. That would mean the others would have really to bear the total brunt of the reduction.

Dr. DE LAUER. I think we could come over and talk to you on a classified basis. You have got staff that knows everything in the black book, as I call it, and when we get through the exercise that has to go on and you make assumptions that something definitely definitive is going to come out of it, we will show you the impact on the full thing.

I think the staff is willing to do that and also the members. If you would like to set up a special briefing on that, we could cover each of those major classified——

Senator **Stevens**. Trips were taken over the February recess and your people have been particularly cooperative this year in giving us some real insight into the future of these programs, and I think that has been very helpful.

Senator Rudman, do you want to continue?

Dr. **De Lauer**. Mr. Chairman, I do not want to interrupt, but this is not gratuitous. I think that your effort in the last month or so in the Central America area, the presentation on TV on Sunday, has been a big help, it really has. And we really appreciate your support.

Senator **Stevens**. Thank you.

Senator Rudman.

Senator **Rudman**. Thank you, Mr. Chairman.

F-4 MODERNIZATION

I have only two questions, one short one and one which you might want to take a little time to answer. The first one has to do with F-4 modernization. My understanding is for about $10 million an airplane we get new engines, increased fuel capacity, increased avionics and radar. It is still a pretty capable airplane. Those that I have talked to, that I have flown the airplane with, feel this would be a very, very good investment.

How do you feel about it?

Dr. **De Lauer**. I am in violent agreement. I do not know who talked to you about that, but this has been an initiative that started with Gen. Jim Ahmann. Remember when he ran the DSAA? He and I had been looking for programs that we could do the original data packages, as I call them. You demonstrate a data package and provide to the alliance and our friends in such a form that it would provide jobs for them in their area.

The one we picked on was the F-4. The problem is the fact that, notwithstanding all the assurances—and I am not really interested in attacking the modernization of our fighter force by extending the F-4's in our forces forever—that it provides a tremendous opportunity to be able to increase capability and extend the life of F-4's that are in other people's inventories, and at the same time provide some jobs.

That is precisely what I want to do.

Senator **Rudman**. Yes, I agree. I know you have been fighting for this. I went out and flew the aircraft and it is a very capable aircraft, still first rate.

Dr. **De Lauer**. We have 1,400 of them.

Senator **Rudman**. Yes, and our allies have most of those. And it seems to me that that is something we definitely ought to do. It is a bargain at the price, when we look at the cost of some of the new aircrafts.

Dr. **De Lauer**. Like I said, I am in violent agreement with you.

Senator **Rudman**. Mr. Chairman, I hope we look at that, the F-4 modernization item.

Dr. De Lauer. I may have to come to you for some help. Now, I get a lot of moral support. The Air Force is willing to give us the airplane, willing the manage the program. They do not like to— they do not want to make a resource allocation between the existing programs and this program

On the other hand, Phil Gast, who now runs DSAA, and myself have been looking at that emergency program, which I think we might have an opportunity to utilize. That is under the jurisdiction of the Foreign Affairs Committee. I have to go explain the program to them and show them it is well worth our investment.

Senator Rudman. It is a very good investment. It would update the aircraft.

Dr. De Lauer. Extend them 10 years.

Senator Rudman. What would they get with the new extended [deleted]. I understand the opposition. There is concern that it might be that good that we might start looking at it as an alternative to some other things. But that is not what you are talking about?

Dr. De Lauer. That is not it at all. Our inventory of F-4's, by the time this program would get underway, would be well past the decade and a half. So that is not——

Senator Rudman. I hope you will pursue it.

Dr. De Lauer. I am going to pursue it.

Senator Rudman. With the fact that many of our allies want these jobs, need a better aircraft, cannot afford some of the other aircraft maybe we would like to have them have. If you look at all the performance envelopes of the F-4's, it is still right up there as a first-line fighter.

Dr. De Lauer. You put the 1120 engine in it and you put the conformal tank on it, extend the range, provide the two places, and replace everything.

Senator Rudman. New radar.

Dr. De Lauer. New radar, and get some of the avionics upgraded. It has a low mean time between failures. It is all done. They are all in production. It is not a question of development.

Senator Rudman. And we have paid for the R&D on most of the components going onto that. It is all paid for, off the shelf.

Dr. De Lauer. All out of existing programs. It is the integration and getting the data package.

Let me say, we have been having a tremendous interest on the part of the Israelis for this. We have been holding them off because we want to control the program.

Senator Rudman. This is one of those things that you look at and you cannot understand why this just does not move along, until you start looking at the politics of it, and I am talking defense politics.

Dr. De Lauer. Outside, too. Everybody has got their share.

Senator Rudman. The last question is one you could probably give a lecture on.

Dr. De Lauer. You do not want it.

PROBLEMS WITH CURRENT PROCUREMENT PROCESS

Senator **Rudman**. Actually, I probably would, but not here this morning, because I do not think we have the time.

As you know, I have been very interested in ways of reforming the whole procurement process, starting from the very beginning to the end. There have been all sorts of attempts made, but they have been piecemeal. They have not really dealt with it systemically.

And I note with some dismay—I hope it is not true, but I note with some dismay that there is a real possibility that you might decide that there are greener pastures sometime later this year. I will not ask you to comment on that, but on the basis that this conceivably could be one of your last major appearances before the committee—and I hope that it is not, but on the basis that it might be, could you give us some observations on what is wrong with the present system?

If you were in a position to write an executive order that would change the whole R&D procurement and test process, what would you do to meet all of the kinds of complaints that you have heard from us and from others during your stewardship up here?

Dr. **De Lauer**. I think I could give you what I call the primer, the table of contents.

Senator **Rudman**. Would you do that. I would like to have it in the record of this hearing.

Dr. **De Lauer**. Let me just say: One, program stability. This gets to maybe the 2-year appropriations cycle.

Two, is the fact that the 5-year plan funds are funded and held firm, which is part of the program stability.

The other is to compress the acquisition cycle by doing the things, the initiatives we have taken with regard to moving into manufacturing earlier than we do now. And there is no secret—and the only supporter I got in the whole Senate was the chairman here—that separating tests from acquisitions is an exercise for people who do not understand the acquisitions process. The fact is the test starts before you make the decision and it continues after we deploy the system. We are still making changes in systems that I worked on as a lieutenant junior grade.

But anyway, that is what I would do. There is not much magic.

FOURTH MAJOR DEPARTMENT IN DOD

Senator **Rudman**. Let me just follow that up with a very short question. I have been spending some time in the past year studying various systems that we have had, that others have had. I have been kind of interested by the history of the ministry of procurement in Great Britain, how that was formulated, how it worked back during World War II, how it has worked since; admittedly, a much smaller system and a much smaller amount of dollars to have to allocate.

Do you think there is any validity to the contention that what we really ought to be moving to, which would meet with cries of anguish from across the river, would be at some point a fourth major part of the Defense Department, essentially administrative procurement that would have all of those functions wrapped into one, with people serving TDY from the various services, but a strong civilian-controlled program, managed stability, managed system, that would be, if you will, totally divorced from the Army, the Navy, the Air Force, a separate system, if you will, a Department of Procurement under DOD.

Dr. **De Lauer**. I think that in order to—if you look at it only as a basis of what is the most efficient way to procure a particular piece of equipment, I cannot argue for centralized management control, but if the objectives of all of this are to get into the hands of the services, the fighting force, the proper kind of equipment, the fact that the equipment is only a piece of the whole fabric—whether it is men, women, the training, the desire, the esprit de corps, things like that I think separating the procurement function would dilute that.

So I am not—you would not find me to be a big supporter of a ministry of supply. There are a lot of weaknesses in the European system. And I had this partner, British Aerospace now in the satellite ballistic, and they were terrible partners. They wanted to stand in line for ballistic. I kept saying, get out there and hustle, get out there and compete. Oh, no, when the time comes they will hand us the things.

That progress, because one of the things that is really a catalyst in this country has been the competitive process that we have.

Senator **Rudman**. I am not sure we should have that competitive process within DOD, Dr. De Lauer.

Dr. **De Lauer**. When it gets to joint programs, I can give you that. But on the other hand, a competitive process, if managed right, I think there is plenty of authority, civilian authority in the Department to do the job.

Senator **Rudman**. Thank you very much. I am sure we will discuss this some more.

STRATEGIC DEFENSE INITIATIVE

I would like to go back to the space initiative a little bit, the strategic defense initiative. The thing that came to my attention as a result of one staff visit that I mentioned was the concept that if we developed a program in a way to require heavy payloads to be taken into space, it would require the development of a new heavy lift launch vehicle, heavier even than the derivative of the space shuttle.

Have you examined into that?

Dr. **De Lauer**. We have looked at that and, depending on the particular way that you would try to assemble this thing, you could do the work that we are planning to do in the next 4 or 5 years with the space shuttle. If you were to deploy a system more extensive than that with a demonstration and actually put it into operation, we might need a heavy launch vehicle.

Whether or not you need it bigger than what is usually referred to as a shuttle-derived launch vehicle, that may not be the—that is an awful lot of good capability. You take those big tanks and cluster them in the right way and you can get an awful lot of payload.

Senator **Stevens**. I understand from other comments that this is pretty well limited to a concept of dealing only with ballistic missiles and not with cruise missiles or bombers, is that right?

Dr. **De Lauer**. That is absolutely correct.

Senator **Stevens**. So where I would like to go, as I think we are all becoming more committed—I hope we are becoming more committed—to the President's concept of reduction as far as nuclear weapons are concerned—are we getting locked into expenditures which would require the R&D for new launch vehicles, new support programs for the strategic defense initiatives, regardless of the outcome of those talks?

Dr. **De Lauer**. No, sir. We have not predicated this program, including the 5-year program, on using anything other than existing launch vehicle capability. As you know, we have an initiative from the Air Force to go with what is called an expendable launch vehicle program, which the aim is to have that as an essentially commercial enterprise, primarily for some major payloads that now exist, not for this particular program.

This program really can be done with the shuttle and what we have now.

SPACE LASER PROGRAM

Senator **Stevens**. My information we have now is that space lasers are probably further along than other forms of space systems, the particle beams, the X-ray lasers. Is that right?

Dr. **De Lauer**. That is right.

Senator **Stevens**. Is there any chance we might, for a change, make the decision now to concentrate on one form and go ahead with it, and not get into this multiplicity of R&D in this period of very tight budgets?

Dr. **De Lauer**. I would recommend against it, Mr. Chairman, because at the present time we have what is called the triad. The experiment of putting a mirror in space, and putting a warning and tracking capability in space, require time. We need to get a couple of years to get that under our belt.

We do not know at the present time whether we can point accurately enough to use a particular laser. We do not know whether or not we can handle the communications battle management aspects of it. We have to have a better idea of what we can do as far as surveillance and target acquisitions.

Those are the experiments we have done without, let me take the laser in space. It is not clear whether you put the laser in space or you put the mirror in space. We have both of those options available. You can put the laser on the ground. If we can get the atmospheric accommodation experiments done right, then you might best be able to keep a laser on the ground and put the mirror in space. Those are the kind of things we are trying to find out about.

Senator **Stevens**. What I am afraid of is, we are coming up with some recommendations for some reductions in the modernization program that will fall in this area, and that we are liable to find a series of options stretched out and none of them proceeding to an area, to a period of tests. And my staff tells me that we will have spent $3 billion in directed energy technology, such as lasers and particle beams, by the end of this year and we do not have anything to show for it yet. Do we?

Dr. **De Lauer**. Oh, yes we do.

Senator **Stevens**. Yes?

Dr. **De Lauer**. We sure have. We have shot down a drone with a chemical laser. We have got results on kill mechanisms, we have got results on being able to have power supplies, which essentially in the case of the chemical laser is chemicals. We have been working on power supplies for excimer lasers that are coming along.

No we are not essentially still groping in the dark about where the next step should be taken. In the case of the third generation, the X-ray laser, there has been testing, proof in principle and things like that. There is a lot of scaling to be done.

So I think the $3 billion has been well spent, when you consider what we are up against. You know, they are doing pretty well.

CURRENT BUDGET FOR LASER PROGRAM

Senator **Stevens**. But we do not seem to be getting to the point of decision as to what is going to go forward. How much request do you have this year for this? Over $1 billion for 1985, is it not?

Dr. **De Lauer**. We have got it in five program elements. Let me get my crib notes. We have got them broken down pretty well, Mr. Chairman. I will tell you exactly what we are spending in each of the areas for 1985.

STRATEGIC DEFENSE INITIATIVE
FY 1985 BUDGET

($ Millions)

Major Technical Areas	FY 84 Appropriation in related areas	FY 85 Planned Prior to President's Speech	FY 85 SDI Budget	% real growth* from FY 84	% growth from FY 85 prior plan
Surveillance, acquisition, tracking & kill assessment	366.5	735.7	721	88	−2
Directed energy weapons	322.5	369.1	489	45	32
Kinetic energy weapons	195.8	296.1	356	74	20
System concepts, battle management, and C^3	82.7	89.5	99	14	11
Survivability, lethality and subsystems	23.5	36.6	112	355	206
DOD TOTAL	891.0	1527.0	1777	71	16
Department of Energy	116.0	210	210	73	0

* 4.7% Price Escalation from 1984 to 1985 for RDT&E TOA

Senator **Stevens**. Do you understand I am coming at this from the point of view, I think of at least one Senator, that seriously supports the President's program in this area and thinks it is overdue.

But the trouble is it seems to be being diversified, and they are now—I understand there is a little disagreement between the space division and the Rand people over which technology to pursue at this time. We have a disagreement on the whole concept of the unified space command.

Will we get that all put back together before we start spending money in 1985?

Dr. DE LAUER. Well, I think the difference with the program that we are now presenting to you is the recognition of every single one of those issues you raised. There is no question, and this is where I have been having a certain amount of difficulty with the people who want to proceed very quickly, on selecting one and then going. The thing that the Fletcher Committee came out with more than anything was the fact that you had better address the whole question of how you are going to employ—not deploy, employ—this capability in essentially a force structure.

This is where the space command comes into it. But more importantly, how do we phase in this capability into the doctrine, i.e. the doctrine that now exists within the services here, in the Air Force as well as the Army, because the Army is involved in this. The Navy will be also involved in it.

The issue that Senator Rudman alluded to when he said, can we not find a better way to do some of these things, is the fact that this has to be integrated into our force structure in such a way that it can be utilized. It will be another weapons system. It is not going to be a demonstration.

You cannot just give it to a "space command". He has got to be tied into the worldwide military command system. He has got to be tied into the national command authority. He has to be able to provide information on what his capability might be.

The whole question of ballistic missile defense and the issue of attacking launching system, that has got be tied in with the whole question of this country's capability on nuclear release. All of this has to be done and has never been addressed before. This is the first time we are really focusing.

That is essentially the surveillance and the systems concept for battle management and C-3. We are going to put $8 or $9 million in that 1985 budet just to answer the question, Mr. Chairman, you started to raise. We have no answer to that question now. JCS has never been involved with how you deploy these weapons.

EFFECT OF U.S. SPACE PROGRAM ON GENEVA NEGOTIATIONS

Senator STEVENS. I am of the opinion that if we had the knowledge and were willing to share it with everyone, that we had the capability for this type of initiative in space, that there would be a lot more urgency to the Geneva negotiations on everyone's part.

Dr. DE LAUER. I support you. I absolutely support you.

Senator STEVENS. Then why do we not find some way to proceed with a limited area, rather than spreading it out so far? You are going to have reductions.

Incidentally, I have just seen this. There is a rumor that you are going to leave us some time.

Dr. DE LAUER. That must be spread by my wife. [Laughter.]

Senator STEVENS. I have to tell you what Fred Sebes used to tell me. You cannot leave and we will not fire you. We need you to see this space initiative through. We need you to get a hold on it and make it produce.

Dr. **De Lauer**. I think you just found a guy you can really beat on. [Laughter.]

Senator **Stevens**. No, we do not think we have beaten on you. We have done our best to take good care of you. We would like to encourage you to really make that initiative become successful in a shorter timeframe than anyone can envision. I think you can do it.

Dr. **De Lauer**. I appreciate your vote of confidence.

Senator **Stevens**. Have other committees been beating on you?

Dr. **De Lauer**. Not really, not really. I did not ask for a rose garden when I took this job.

Senator **Stevens**. But do not leave. We need you.

Did you read that?

Senator **Rudman**. Yes. I did.

Senator **Stevens**. One of those things.

ENGINE THRUST CONCEPT

Let me turn to the engine thrust concept, the last series of questions. Do we have to develop a thrust improvement engine acquisition plan for the 1990's?

Dr. **De Lauer**. Yes, sir.

Senator **Stevens**. Why?

Dr. **De Lauer**. Because, if you look at the Soviet threat in the fighter force and their capability, our F-15's and our F-16's cannot meet that threat in 1990.

Senator **Stevens**. We just went through that. We were told thrust was not a criteria.

Dr. **De Lauer**. Thrust was not a criteria for this decision, which was absolutely correct, to go competitive. And essentially, the money to be spent in 1985 and on was a competition for the purpose of broadening the base and providing a better competitive environment, therefore, a lower cost to the Department in the future in our planned fighter force. That has nothing to do with improvements to the fighter.

Now, what has come out of deliberations, not in the engine case, because that was a separate procurement, but in the dual role, in the dual role fighter competition—and the one that they decided on and they are recommending to Congress the F-15.

What came out of those discussions and a lot of meetings together was that the Air Force would do the following. That they would proceed with the thrust upgrade program for both engines, for the purpose of upgrading both the aircraft and the engines. And about the fifth year from now would have an upgraded capability, both on the 110 and the 100 engine.

Two, they would proceed with the crank-wing F-16, the model, phasing that in through the period; essentially providing to us that in the year 1990, by the Defense Department year 1990, an upgraded fighter force of F-15's and F-16's that could meet the Soviet force threat at that time.

INCREASED THRUST IN FIGHTER ENGINES

Senator STEVENS. When we were at Edwards, the test pilots told us that they would like to have more thrust.

Dr. DE LAUER. Absolutely.

Senator STEVENS. Now, not in the 1990's.

Dr. DE LAUER. The existing engine, the F-100 engine, has a thrust improvement program of about 15 percent. That is what gets you up to, I think it is, 2800. That is already in the program. It should be accelerated now and it should get around in the engines and should be installed in the new production about 2½, 3 years from now. So is the F-110.

Senator STEVENS. You are going to ask to reprogram some money for 1985, or even this year, to start this now?

Dr. DE LAUER. We had some in 1984 and we did not have some—we had some in 1983 and we had some in 1984. Yes, I am going to ask the Air Force for it. It might be in the same category as the F-4, but with your support I cannot see how I can fail.

MODIFICATION TO F-16

Senator STEVENS. Well, what we saw out there, with the modifications being made to the F-16, is that there is no question they need more thrust. They are adding those tanks, they are adding the dual role capability, they are adding weapons.

It would seem that anyone who is a pilot would want to know, what are you going to do to keep at least the current relative capability in terms of thrust, and to say that you need more thrust to stay even.

Dr. DE LAUER. That is right, that is absolutely correct.

Senator STEVENS. It would seem also, if we are going to modify them in 4 or 5 years, we should think about doing it soon. It would save money in the long run. You do not have to go back and retrofit all those engines.

Dr. DE LAUER. The engine is not the long pole in the tent. You have to modify the airplane a little bit.

Senator STEVENS. We thought we saw the modified engine.

Dr. DE LAUER. Yes. But right now none of the existing aircraft have the right air intake. That is part of the upgrade of the existing inventory that we have to figure out. You need a new inlet to take the thrust upgrade in the F-16 and the F-15, but the F-16 is in a little bit better shape.

MX MISSILE

Senator STEVENS. What about the MX? I said this would be the last question, but I am going to keep going here a minute. What about the MX? We understand that as far as the statement coming out of the House, that the existing rate of production is 21, is it?

Dr. DE LAUER. That is the number. Twenty-one is what the Congress has funded up to the present time.

Senator STEVENS. This budget projects going up to 40?

Dr. DE LAUER. That is right.

Senator STEVENS. There is what, a couple a billion dollars in that up ramp on there?

Dr. **De Lauer**. Yes, sir.

Senator **Stevens**. What would be the impact if we say, hold at that level?

Dr. **De Lauer**. You will slip the program.

Senator **Stevens**. You have not got a real permanent basing mode yet, do you?

Dr. **De Lauer**. We have the Minuteman silos. That is a permanent basing mode at the present time.

Senator **Stevens**. My good friends from North Dakota—this is my friend from New Hampshire—from North Dakota keeps after me about the concept of trying to deploy the MX on rolling stock, on railroads. Have you got any ongoing research on that?

Dr. **De Lauer**. No, sir. The only mobility we have is with the small missile, by direction. Congress told us to take the MX and put it in the Minuteman holes, deploy it to a certain rate, and in that time you have to be prepared to come back and tell us what you are going to do with the mobile small missile.

If we give you the right answers on the small missile then, you will extend the deployment of the MX. Both of those things will probably slip if we are delayed. How much? I have not got the numbers.

Senator **Stevens**. What is the IOC now of the MX?

Dr. **De Lauer**. 1986.

Senator **Stevens**. Did I not read something in the paper yesterday or today about some problems with some tests?

Dr. **De Lauer**. No. What you read was a premature release of an investigative report commissioned by the subcommittee of the House Military Construction Investigating Subcommittee. They sent some people out to look at whether or not the construction program matches the deployment ambitions, matches the Minuteman thing.

We just got our hands on that. I just looked at it this morning. We just got our hands on the draft report. The Air Force is in the process of reviewing it point by point. We should have an answer back to them as soon as we can.

My first glance at it, it looked to me like somebody was out there trying to find out some reasons not to do some things and trying to find out some reasons of what we could do to fix it. But I cannot give you a definitive answer on that, Mr. Chairman. I just have not had time.

Senator **Stevens**. All right, we will talk about that later. I think we will be talking to you a couple of times this year, it looks like.

Dr. **De Lauer**. Always a pleasure.

[The information follows:]

MX Test Problems

Our preliminary review of the Surveys and Investigation reveals a significant lack of understanding by the investigators on the details of the MX program. We found many inaccuracies and erroneous conclusions. For example, the report states that we will use untested cables to emplace the first missiles because the Proof Load Test Facility located at F. E. Warren AFB will not be done until August 1986. This facility was never intended to be used to test the original cables, because it is for recertification of the cables through the life of the program and is not required until after the missile is deployed. The original emplacer cables will have been thoroughly tested and used in support of test launches at Vandenberg AFB before they are used to emplace missiles in Wyoming and Nebraska. As another example, the report states the original missiles will be less capable because the long term test and maintenance facilities will not be completed before the missiles are deployed. Again, these facilities never were intended for use as predeployment test sites. They are for troubleshooting and maintenance actions throughout the life of the program. Early in the program these actions will be accomplished by the contractors who are responsible for correcting the problems in their facilities. These are but two examples; we are preparing an item by item rebuttal which will be furnished to your Committee.

We have stated on numerous occasions that the Peacekeeper schedule is tight; however, with the detailed management attention being given the program, we are confident that the scheduled initial operational capability of December 1986 can be met with high system capability and reliability.

Senator **Stevens**. You know, I have been very interested in the C-17. At the same time, I accept the decision of Congress on the C-5B.

How long will the C-17 development program be going if we give you the $129 million you request this year?

Dr. **De Lauer**. I think the IOC is scheduled for like 1989, 1990, someplace like that.

Senator **Stevens**. It needs $129 million to make that?

Dr. **De Lauer**. To make that date, yes, sir.

Senator **Stevens**. Any more?

Senator **Rudman**. No.

Senator **Stevens**. We thank you very much. As a matter of fact, after reading the staff report, what I am thinking about doing is to try to see if we can get some of our members to give us a couple of days and go out there and see a portion of the things that were involved.

Dr. **De Lauer**. I would love to have them.

RAND CORP LINE ITEM

Senator **Stevens**. One thing that stuck out in the report, Rand now has a line item for the first time. Tell us about that. Why is that necessary?

Dr. **De Lauer**. Out of the Appropriations Committee, came some language that had to do with sole source selection of contracts. One of the things that—the way Rand was funded was the fact that they were an FCRC, Federal Contract Research Center, for what is called Project Air Force, which is a little over half of their DOD activity. They are essentially a Defense Department contractor on task by task for the other half.

That particular provision in the appropriations bill created a situation where they could not do any real planning if they felt that if they had to go through a competitive process for that last half. So what I did, after having our people talk to staff and having Don Rice come in and talk to the people in the Congress, was to take the full amount of money that the Rand now receives and, on the basis of an FCRC, make Rand a full FCRC.

At the present time what we have done is shown by that amount as a specific line item, so you can see that it will go to Rand. That money will be put together, other than Project Air Force, as a particular set of tasks that Rand will have to do. There will be an oversight committee and they will give Rand a set of instructions as to what they would like to see Rand do for the following 2 or 3 years, for some stability to them.

We are thinking of doing the same thing to IDA.

Senator **Stevens**. You must understand, I am not antagonistic to what you are trying to do and I have great regard for Rand. But the thought popped through my mind when I saw that if we have a consultant reduction, which we face from time ot time, that means Rand is immune because it is a line item.

Dr. **De Lauer**. We would reprogram it like in anything else.

Senator **Stevens**. I could tell people who might sponsor that that it would not have any impact.

Dr. **De Lauer**. That is right. I think, to be clear on it, though, Rand, like anyone else, needs a reasonable amount of lead time to cut back down. I think that we would have to make a review of Rand, IDA, Lincoln, Mitre, Aerospace. They are all FCRC's, and CNA. Those are all the ones that we have.

They are all managed slightly different. Rand as you know, was split out this way years ago. At that time we had some encouragement that Rand ought to be looking to providing their capability for organization other than the Defense Department.

Well, that sort of disappeared. The "civil systems" never materialized and, while they still do odds and ends, 99 percent of their work is for the Government. The Government split is between DOD, which is half of their work, and with the rest of the agencies, which I think is good. I am trying to do the same thing with IDA.

I think the one place that needs support is the JCS. They do not get enough analytical support, they do not get enough professional support. IDA, for instance, is helping.

Senator **Stevens**. Is the Roosevelt Center providing any assistance to you now?

Dr. **De Lauer**. You mean Riverside? Roosevelt does not ring a bell, Senator.

Senator **Stevens**. I understand it is a reorganization of several in the past. I just heard about it the other day.

Dr. **De Lauer**. There is one up in Michigan that also provides help.

SUBMITTED QUESTIONS

Senator **Stevens**. Thank you very much, doctor. We appreciate your coming. Before closing, the submitted questions from the subcommittee and the members will be inserted at this point.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Technology Base

QUESTION: On the other hand, growth in the technology base is very small, and a comparison with last year's projection for FY 1985 shows the Services held down spending in technology base to keep pay for growth in other areas, such as tactical programs. Are you satisfied with the level of effort of our technology base?

ANSWER: A comparison of the DoD Technology Base account between FY 1984 to FY 1985 reflects growth of $3,024 million to $3,226 million or about 1.8% in real terms. However, the growth comparison is distorted by changes made between budget activities to create the President's Strategic Defense Initiative (SDI). $318 million was transferred from Budget Activity 1, Technology Base to Budget Activity 2, Advanced Technology Development to focus SDI efforts in a single account (Budget Activity 2). When accounting adjustments are made, the Technology Base grew by 12% in real terms. I am satisfied with this level.

QUESTION: Wasn't the Defense Science Board urging increase in the technology base just a few years ago?

ANSWER: The 1981 summer study panel on the Technology Base did not make a recommendation concerning the total magnitude of the DoD Technology Base.

STRATEGIC DEFENSE INITIATIVE

Question: What has been the general reaction of the scientific and technical community to SDI? Do these experts believe it is achievable from a technical standpoint?

Answer: The group of scientists most familiar with the technical issues involved, those who served on the Defensive Technologies Study Team (Fletcher Panel) concluded with a stong sense of optimism. They believed that the technologies they reviewed last summer could eventually produce highly effective ballistic missile defenses. This group took a skeptical perspective at the outset, but were encouraged by the prospects as they considered the technical prospects in depth. Other groups of scientists, less familiar with the technologies and with recent technical progress, have expressed similar reservations about the promise of the new technologies. Nevertheless, virtually the entire US scientific and technical communities strongly endorse the need for a vigorous research and technology demonstration effort such as the Strategic Defense Initiative, both as a hedge against potential Soviet moves in this area and to fully explore the possibilities and merits of an effective US ballistic missile defense.

OFFENSE VS DEFENSE

QUESTION: Senator Goldwater has criticized SDI, stating that "the best de_fe_nse is a good offense." Is our money better spent on maintaining an effective deterrent force?

ANSWER: No. Our money has to be spent both on modernized offenses, which are needed before active U.S. defenses become available, and on research into defenses, which could well become a critical need in the foreseeable future.

Deciding now against defense research would tend to eliminate the possibility that defenses could become a future American option. The assumption that we will never need defenses, regardless of what our adversaries do, appears to be unsupportable. For instance, if the Soviets were to adopt widespread ballistic missile defenses, as many analysts expect them to do, our best option is not likely to exclude defenses. We need the flexibility to respond in more than one way.

Secretary Weinberger, in an interview on the ABC program "David Brinkley Report" of April 8, 1984, expanded on this theme:

> "If (the Soviets) should get (defenses) first, it would be a very, very dangerous world... if both sides had a firm, reliable defenses, ... any use for (missiles) would disappear; and that would make ... a vastly better world." (emphasis added)

He also noted of defense that

> "It's a very noble objective in and of itself, if we can succeed."

Question: Is the Air Force still budgeting for two JSTARS test beds -- one with the TR-1 and the other with the C-18 (a Boeing 707)?

Answer: In accordance with Congressional direction, the Air Force has structured a Joint STARS test program that does not prematurely foreclose any of the proposed operational concepts. To accomplish this, the radar will be installed and tested on the TR-1 and OV-1D aircraft. The C-18 will not have a radar, but will have the complete suite of on-board operators and data processing to perform the functions of wide area surveillance, attack planning, attack control, and post attack assessment.

Question: In view of the budgetary constraints facing us, shouldn't one test bed be terminated?

Answer: Termination of the TR-1 would require the radar testing to be done on the C-18, which is technically feasible. Termination of the C-18 would foreclose the option of airborne data processing, since the TR-1 cannot carry the consoles and operators necessary to perform this function.

Question: In your opening statement to Congress you mention that priority attention in the Alliance is now focused on four mission areas: -- defense against first-echelon attack -- attack of the follow-on forces -- counter-air -- C^3I and Counter C^3I. In terms of your budget request, toward which mission area is most of the R&D going? Are you even thinking in these terms?

Answer: The budget request represents a balanced approach to these and other mission areas. No one mission area can be emphasized at the expense of another, since all areas are interwoven and each must function satisfactorily for the others to succeed. Moreover, many of the individual systems (e.g., air-to-surface missiles) are applicable to more than one mission area, and it would be misleading to identify that system with a single mission area.

Question: Does a firm IOC date exist for the JTACMS program?

Answer: No firm IOC has been established for the JTACMS program. Both the Army and the Air Force are continuing to work together to resolve the joint and service unique requirements for this system. As the refinements are defined, the development program and the IOC will come more firmly into focus.

Question: Could these programs be slowed without substantial harm being done to our long-term defense posture in Europe? Aren't they already being slowed, due to Army/Air Force differences on requirements?

Answer: The evaluation of how much harm would be done to our long-term defense posture is, of necessity, a subjective one. Based on the overwhelming imbalance between NATO and Warsaw Pact forces, and the pervasive desire to raise the nuclear threshold, there is a pressing requirement to field a weapons system such as JTACMS at the earliest practical time. It is essential that Army and Air Force requirements be harmonized before embarking on this program to ensure that a combat effective system is fielded.

EMERGING TECHNOLOGIES

QUESTION: Dr. DeLauer, do the so-called emerging technologies in the NATO conventional area eliminate the requirement for modernization of our battlefield nuclear weapons?

ANSWER: No. Battlefield nuclear weapons compel Warsaw Pact forces to operate in dispersed formations to limit the risks of possible NATO nuclear use, thus permitting WP forces to be more easily engaged by conventional weapons. If the battlefield nuclear capability is maintained through judicious modernization, it will be possible for NATO to capitalize fully on emerging technologies to exploit weakness in WP conventional tactics.

Nuclear forces can deter massing of WP conventional forces; however, they cannot preclude superior force ratios from developing by rapid commitment of WP follow-on forces. Therefore, NATO conventional forces must have the capability to locate and interdict follow-on forces, slowing their rate of advance and commitment to the battlefield, thereby reducing adverse force ratios to manageable levels. Nuclear and conventional forces are inextricably intertwined in achieving NATO's defense objectives.

NUCLEAR ARTILLERY

QUESTION: How important is the acquisition of a new 155mm nuclear artillery round to maintaining a credible nuclear deterrent posture in Europe?

ANSWER: The NATO Short-range Nuclear Forces (SNF), which includes the 155mm nuclear artillery round, are an essential component of the NATO triad of conventional forces, non-strategic nuclear forces and strategic nuclear forces. These systems help offset the Soviets massive numerical advantage in conventional weapons. The mere presence of these nuclear weapons on the battlefield could force the Soviets into dispersed formations, thus slowing the momentum of an attack, and permitting enemy forces to be more easily engaged by conventional weapons. Specifically, the new 155mm nuclear round (W-82) is needed to replace the current round (W-48) which is obsolete. The W-48 is one of the oldest weapons in the nuclear stockpile. [Deleted].

NUCLEAR JTACMS

QUESTION: A floor amendment last year prohibits spending FY 1984 funds on a nuclear warhead for JTACMS.

Do you intend to pursue R&D on a nuclear-JTACMS as a replacement for LANCE? Would this help balance off Soviet deployment of the SS-21 and SS-23 in Europe?

ANSWER: In accordance with the FY 1984 amendment, DoD will not pursue R&D on a nuclear JTACMS. However, the near-term requirement to improve the LANCE's range and accuracy remains in view of the SS-21 and SS-23 threat. Such an improved LANCE would provide a time-urgent capability to engage Warsaw Pact follow-on forces.

NATO AIRBASE DEFENSE

QUESTION: In funding the additional $200 million for NATO Airbase Defense last year, Congress expected the 1985 budget would reflect associated program adjustment. Why hasn't the Department worked this expensive program into its budget?

ANSWER: The Department of Defense is carrying on detailed discussions with the Federal Republic of Germany, finalizing an agreement of principles signed by MOD Woerner and Secretary of Defense Weinberger on 6 December 1983. Until the details of this agreement are finalized, budget projections on the remainder of the NATO cooperative Air Defense programs would not be practical.

QUESTIONS: How does the NATO Airbase Defense Program, as it is currently envisioned, address the chronic two-way street problem with our NATO allies?

ANSWER: [Deleted].

BALANCE OF TRADE

QUESTION: In view of the current overall balance of trade that heavily favors Europe, why is the two-way street agreement even valid?

ANSWER: The overall balance of trade on current account does, of course, affect one's perception of the two-way street issue. It is certainly a factor to be taken into consideration. But our Allies also have a point in urging that there be more of a balance in the procurement of defense equipment and materiel for the armed forces of the Alliance. The US call for substantial improvements in NATO's conventional defense capabilities will be suspect if the overwhelming bulk of the defense business concerned goes to US contractors. In this regard, our Allies contend that if there are imbalances in non-defense trade in their favor they need to be corrected by adjustments in the non-defense sector, and that the burden of offsetting such imbalance should not be made to fall predominantly on European defense industries.

DIVAD SYSTEM

QUESTION: Problems continue with the Army's DIVAD gun. We understand it's 6 months or more behind schedule and keeps having problems with ammo feeding and targeting. And there are plenty of critics who insist this close-in air defense gun won't do the job, anyhow. Why shouldn't Congress put this one on the shelf?

ANSWER: There have been some production start-up problems, however, none have been unusual or critical. This program began as a requirement in 1978, and just six years later, the Army accepted its first production vehicle. That acceptance was just 5 months behind the original forecast. This must be considered good performance when compared to other major weapon system procurements. The prototype fire unit met required performance objectives and the contractual arrangements with the prime contractor require that the production versions do better. Without the Sgt York gun systems, the tanks and armored personnel carriers would be vulnerable to attacks of the Soviet armored attack helicopters and close support fixed-wing aircraft.

MANAGEMENT ATTENTION

QUESTION: You now have three major ballistic missile programs, the MX, the small ICBM, and the Trident II, totaling about $4½ billion, in your budget. How do you give proper management attention to each of these programs?

ANSWER: These three programs receive extensive management attention at all levels. The Secretary reviews them regularly. We have carefully coordinated implementers throughout the DoD staff and provided these to the Services so that there are no misunderstandings concerning the requirements. During the past year, the Trident program was reviewed in detail by the Defense Systems Acquisition Review Council and the small ICBM program has been reviewed by the Schriever Independent Advisory Group. In addition, we have formed a small ICBM steering group at my level and the Air Force has formed a senior officer review group to ensure continuing review of the small ICBM program. These critical elements of the modernization program will continue to receive proper management attention.

TOO MANY PROGRAMS

QUESTION: Do we have too many ballistic missile programs ongoing at one time?

ANSWER: No. The Peacekeeper, small ICBM, and the Trident II (D-5) programs are all essential parts of the Scowcroft Commission's three-pronged approach to achieve stability at reduced levels of forces. The Peacekeeper demonstrates our willingness to do whatever is necessary to offset Soviet counterforce advantages and provides the necessary incentive for them to engage seriously in arms control negotiations. The small ICBM provides enhanced survivability and with its single warhead provides stability by creating an exchange ratio which is unattractive to an attacker. The Trident II (D-5) upgrades the sea based leg of the Triad by improving survivability and providing increased capability against hard targets.

SMALL ICBM

QUESTION: There seems to be a foregone conclusion in Congress that the small ICBM will be based in a mobile mode, possibly the so-called HML--Hardened Mobile Launcher. Would cuts to the FY 1985 silo hardening R&D request of $220 million preclude a full and fair assessment of this technology against mobile basing modes for the small ICBM?

ANSWER: Very definitely. As a result of the FY 1984 cut of $105 million, the program was reduced in scope and stretched to the point of sharply higher decision risks. Any further cuts would jeopardize our already precarious status on this important effort. As you recall, the Scowcroft Commission recommended work in this area because a small ICBM in a hardened silo basing mode would further enhance stability by complicating the attacker's targeting.

HML TECHNOLOGY HURDLES

QUESTION: What are some of the technical hurdles that must be reached in the HML program? Won't a mobile basing mode also increase program operations and support costs, as the MPS scheme did for the M-X?

ANSWER: The major technical issue in the HML program is to provide a high level of survivability in a cost effective configuration. For HML to be a feasible solution, sufficient hardness must be achieved to permit basing on government lands. The solution must be robust enough to prevent upset of the launchers in a nuclear attack environment. Moreover, we must be able to develop techniques and methods for testing potential launcher configurations. In addition, mobile systems inherently have higher operation and support (O&S) costs than do fixed silo systems; however, these higher costs may be offset by the increased survivability of mobile systems. A major goal of the multiple, competitive system definition contracts is to define innovative and affordable concepts that address these challenges.

HOW MANY SMALL ICBMS

QUESTION: When will you decide on how many small ICBMs will be procured?

ANSWER: The Initial Operating Capability (IOC) for the small ICBM is planned for late 1992. Various factors must be considered prior to determining the exact number of small ICBMs to be deployed. These activities include (1) START initiatives and agreements, (2) basing mode(s) selected, (3) projected threat and operational requirements to implement National Strategy, (4) deployments/retirements of other systems, and (5) projected life cycle costs of the new ICBM. The specific number of small ICBMs to be recommended for deployment should be determined in the late 1986 - early 1987 time period, after the above considerations are evaluated.

MULTIPLE BASING MODES

QUESTION: Are you seriously considering multiple basing modes for the small ICBM? Won't these decisions seriously influence program cost?

ANSWER: The Scowcroft Commission suggested that multiple basing modes would enhance stability by complicating the attacker's targeting problems. We are currently assessing soft mobile, hard mobile, and hardened silo configurations. If all turn out to be feasible, some mixture might be the best solution. Since mobile systems have historically been estimated to be more expensive than fixed systems, multiple basing modes may be less expensive than all mobile. It is the purpose of the current pre-full scale development program now in progress to answer these questions.

SMALL ICBM WEIGHT

QUESTION: Can you live with the 33,000 pound weight restriction placed on the small ICBM by last year's authorization legislation? How does that affect your tradeoff analyses in the propulsion and guidance/control areas?

ANSWER: Current estimates from Industry and Air Force indicate that a 30,000 pound missile is possible. We have awarded four competitive contracts to develop concepts for lightweight motor technology development. In the guidance and control area we have awarded one contract to develop a lightweight Peacekeeper guidance system. We will shortly award multiple contracts for alternate guidance concepts which may be lighter than the modified Peacekeeper guidance.

Planned Competition for DoD Acquisition

Question: Last year's appropriation bill requires that all systems entering Full Scale Engineering Development (FSED) must develop an acquisition plan utilizing two or more production sources unless the Secretary certifies that procurement quantities do not justify such an approach. Are you arranging to comply with that requirement?

Answer: Yes, we are addressing this area as part of the DSARC process. We routinely review a program's acquisition strategy, including plans for development and/or production competition, at the early milestone decision points in this process.

Question: Do you consider it a workable requirement?

Answer: The requirement is workable since we already do this as part of our normal review process, but the certification is unnecessary since second sourcing is readily discussed as a technique to improve competition where appropriate and when it is cost effective. We continually strive to improve competition. The DepSecDef recently signed two letters that address competition in the production phase and at the subcontract level, and has directed additional emphasis in this area.

Question: I understand two of the four programs entering FSED this year already have second sources and the other two are scheduled for a review soon. How is this going?

Answer: We think improvements are being made in our use of second sourcing when it is appropriate. Two programs reviewed in the DSARC process at Milestone II have planned to introduce second sourcing later in the production phase. The DDG-51 program has plans for competition after the lead ship. The MK-50 Torpedo program is looking at alternative ways to introduce second sourcing in the production phase. Our two remaining programs, the CV HELO and the SHORAD C^2, will be reviewed later this year.

Question: I note that there are about 10 additional major systems currently in full scale development which need not be reviewed under Section 797. Do you plan to review those programs for establishment of second sources of production? Would there be any problem in requiring that review?

Answer: Yes, we will be reviewing these or the Services will review them. I believe the policy letters previously mentioned will further emphasize this technique in addition to the DSARC review; therefore, it should not be necessary to legislate a subsequent review and certification process.

TACTICAL DIRECTED ENERGY PROGRAMS

Question: Why have so many of our tactical directed energy programs been terminated? (Examples: Army Roadrunner, Navy Sea Lite, Airborne Laser Laboratory)

Answer: The Navy's Sea Lite Program and the Air Force's Airborne Laser Laboratory were terminated by the Congress. The House Armed Services Committee zeroed the Sea Lite program and the Airborne Laser Laboratory in their action on the fiscal year 1984 budget request. The committee's stated reason for the action was that there is no potential application for those programs. (Subsequent action by the authorization conferees permitted an orderly termination of the Airborne Laser Laboratory in FY 1984.) The Army terminated the Roadrunner program primarily for budgetary reasons.

Manufacturing Technology Program

Question: Dr. DeLauer, last year a large portion of the $200 million plus for your Manufacturing Technology Program was transferred from the procurement accounts to the R&D accounts. The Committee reluctantly agreed to that approach in conference. What problems are you experiencing in executing the 1984 program?

Answer: We certainly appreciated the Committee's support last year in our attempt to prevent the Manufacturing Technology Program from being moved into the RDT&E appropriation. As a result of the final conference action, we reluctantly included all of our FY 1985 ManTech budget request in the RDT&E appropriations. We did so because of our concerns of the down-side risk of losing this important program for failing to follow our perception of the Congressional guidance. However, we continue to believe that the ManTech program should be predominately funded from the procurement appropriations where, as we see it, it will provide the greatest payoff because it will be managed by individuals and the structure in the Department whose experience lies in production rather than in the traditional R&D functions.

We have not given up on the idea that the program should be predominately procurement funded and again solicit the Committee's support in moving the portion of the FY 1985 program back into the procurement appropriation where it makes sense to do so. We are in the process of quantifying this division.

While it is too early to specifically determine what the impact on the FY 1984 action will ultimately be, we can provide some initial observations based upon the two aspects of this issue -- program execution and budget formulation.

The DoD MT community is trying very hard to adapt to the change to RDT&E funding ground rules. RDT&E obligations and expenditure rates differ from those in procurement. Some differences are Congressionally mandated and others have evolved within the DoD RDT&E infrastructure over the years. Whatever the reason, they are different and the field activities are being required to adapt to them. Their initial degree of success varies from one organization to another. In general, those organizations which had not previously used RDT&E funds are not high on the learning curve in the adaptation processes and are expending a considerable amount of resource learning a new system. However, some organizations which had experience in using RDT&E funds previously, are apparently better able to adapt to their new boundry conditions. The final report card for the program, as a whole, cannot be completed until the end of the fiscal year when we will be better able to assess whether or not the current RDT&E funding requirements have been or can be met.

There are those at the working level who are quite concerned that the very nature of the ManTech program assures that the targets cannot be met. The ManTech office in one Service has asked for a two-year waiver to the existing procedures in order to permit it to restructure the program to meet the new ground rules. One key manager indicates he has been spending 50 percent of his time on just fiscal matters necessitated by the adaptation process. He pointed out that this has taken a significant amount of his time away from technical management of the program which is where, in his view, his time can be more profitably spent.

In some cases, the adaptation process has necessitated a technical restructuring of the program in order to complete work initiated with procurement funds but now being completed with RDT&E funds. Other technical changes have been made in an attempt to assure that fiscal targets have a reasonable chance of being met. Some projects have been dropped completely because it was felt they could not be executed under RDT&E ground rules and will have to be restructured. It has also been reported that some projects have been grouped together in "basket projects" in order to reduce the overall administrative burden of the procurement process. The long-term impact of these reported problems with the transition on the program's overall technical effectiveness will not be apparent for several years.

The transition to RDT&E is also expected to have an impact on the ManTech budget formulation processes but again its true impact cannot be assessed at this time. The request for ManTech funds will be shifted from the priorities of the production base infrastructure to the priorities of the R&D infrastructure. Only time will tell how well the industrial base needs will be met in this new environment. While one is tempted to base conclusions on the FY 1985 budget formulation process, it cannot be considered representative because the Services submitted the FY 1985 ManTech request to OSD as a procurement budget and it was moved to RDT&E only after the Congressional action on the FY 1984 budget. While some adjustments were made during this transition which would not otherwise have occurred, true impact of the merger into the RDT&E fiscal structure will not be apparent until after the FY 1986 budget formulation process has been completed.

OSD has attempted to assure the continued viability of the ManTech program while simultaneously being responsive to DoD's perception of Congressional guidance. For example, we wrote to the Secretaries of the Military Departments in January 1984. We indicated that the ManTech program plays a critical role in establishing advanced manufacturing technology necessary for the production of DoD materiel. We pointed out that even though the RDT&E funds are now being used, the goals and objectives of the ManTech program have not changed; the policies for selecting, justifying, and managing individual investments have not changed; and went on to suggest that the organizational responsibilities for the program should not change.

Nevertheless, the ManTech program has moved from one major DoD fiscal organizational infrastructure to another whose traditional goals and objectives are entirely different. While we are working very hard to adapt to the new environment, the transition does not simply involve movement of figures from one ledger column to another. It is a major change in the way the ManTech program does business. Perhaps, as DoD sees it, a totally unnecessary and non-productive change.

Tactical Communications Program

Question: There has been a lot of change in the last year in the Joint TRI-Service Tactical Communications Program, the so-called TRI-TAC Program. Would you summarize the approved changes to that multi-billion dollar program, such as the Army's switching to something called "Mobile Subscriber Equipment," a new $3.3 billion program?

Answer: During the past year, the Army has been conducting a thorough review of their Battlefield Communications Architecture. This review was required in order to insure that the supporting tactical C^{3}I structure is responsive to the Army's emerging doctrine that emphasizes high mobility and offensive operations at Corps level and below. This Review has led to a revision of the Army's Battlefield Communications Architecture and, therefore, a revision to their requirements for various TRI-TAC equipments. These anticipated changes will be reflected in Army budget submissions starting in FY 85. There have been three significant changes to the TRI-TAC Program during the last year and these are discussed below.

1. Mobile Subscriber Equipment (MSE) has always been a part of the TRI-TAC Architecture at the Army's Division level. One conclusion of the Battlefield Communications Review was that MSE is necessary at the Corps level to support current tactical doctrine. The introduction of MSE at the Corps level leads to a commensurate reduction for all TRI-TAC equipment originally intended for Corps level (i.e., AN/TTC-39, TYC-39, ULCS, DGM, Radio Transmission Assemblages, etc.). Some of these reductions are reflected in the FY 85 budget and more can be anticipated in the out years to accommodate the funding requirements of the Mobile Subscriber Equipment. The Army retains the requirement for those TRI-TAC equipments originally planned for Echelons Above Corps (EAC).

2. The Army has proposed to incorporate a minimum set of technical control features into its AN/TTC-39 Circuit Switch. This eliminates their need for a separate AN/TSQ-111, Communications Nodal Control Element (CNCE). This change has been discussed with Congress and its approval is a matter of Congressional Record.

3. Finally, the Tactical Digital Facsimile (TDF) Program Management has been transferred from the Navy to the USAF for procurement. The Army and Navy have eliminated their requirement for the AN/UXC-4, TDF. There is a requirement for lightweight, black and white tactical battlefield facsimile. The Army has been tasked as lead Service for procurement of a lightweight, black and white digital facsimile as a non-developmental item beginning in FY 85.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

STRATEGIC BALANCE

QUESTION: Most discussions of the US-Soviet strategic balance compare our strategic offensive forces to Soviet strategic offensive forces, counting numbers of warheads and numbers of delivery platforms. I believe this sort of static comparison does not add to our understanding of the problem. I believe the most accurate measure is a comparison of each side's offensive forces against the other side's defenses and against the target base which must be assured of destruction if deterrence is to remain credible. Please provide the Committee with an unclassified narrative description of the changes we have seen over the past ten years in Soviet strategic defenses and in the target base we must threaten, as compared with the structure and capabilities of our forces. Please project these developments into the future as trends, taking into account the new US and Soviet systems you see entering service over the next ten years. Please perform a similar analysis and provide a similar narrative description comparing Soviet strategic offensive forces with our strategic defenses and the target base Soviet strategic planners most likely have selected for destruction here.

ANSWER: U.S. Retaliatory Forces versus Soviet Defenses. With regard to your request for an analysis of changes in Soviet strategic defenses and in their target base, the following lists each major category of targets which the Soviets protect against retaliation and describes the trends in our capability to retaliate effectively.

Leadership and Control. For the last 30 years, the Soviets have systematically worked to construct hardened command posts and survivable communications for key military commanders and civilian managers at all levels of the Party and government. These selected individuals are provided hardened alternate command posts located well away from urban centers. This comprehensive and redundant system, composed of more than 1500 hardened facilities each with special communications, is patterned after similar capabilities afforded the armed forces. The number of such facilities is continuing to expand and their effective hardness is increasing Soviet protective measures. Today there is serious doubt that we could hold at risk a significant portion of these targets. The MX in the late 1980s and the D5 in the early 1990s will restore some measure of capability against some of these targets thereby restoring strength to our deterrent.

Strategic Reserve Forces. The Soviets have invested heavily to ensure that they will have a large force available for follow-on strikes. To this end, the Soviets have increased the hardness of their SS-17, SS-18, and SS-19 ICBM silos to a level such that, regardless of the scenario assumed, most of their force would survive. This increased Soviet hardness will be offset to some degree by the improved hard target capability of the MX and D5; however, the expected Soviet move to more mobility in their ICBM force will tend to maintain their advantage.

The long range of Soviet SLBMs allows their submarine-based missile force to be operated from protected waters and operation under the Arctic ice cap could further enhance the survivability of this force. We are unable to estimate the effectiveness of the Soviet plans for the dispersal of their bomber forces.

General Purpose Forces. Prior to the initiation of a conflict, the Soviet General Purpose Forces (GPF) would disperse from garrison to predesignated areas. Targeting of such protected forces is presently ineffective because of our inability to know in advance the dispersal areas which will be used, the large size of the areas, the wide distribution of troop units within the areas, and their use of special trenching equipment to protect against nuclear effects. According to Soviet doctrine, these forces would be used after a nuclear exchange to achieve their political/military objectives against neighboring areas such as Europe, Japan, or the Persian Gulf. The unique capability of the penetrating US bomber force (B-1B and ATB programs) to hold these Soviet GPF at risk in the future will prove critical to our ability to deter Soviet attack by denying them these political/military objectives and our ability to fulfill our commitments to Allies.

War Supporting Industry. The Soviets diffuse their war materiel production throughout their industrial base, have located an unknown amount of industrial capability in underground facilities, and have plans for preattack relocation or expedient hardening of some industrial elements. We do not know the extent to which such plans might actually be executed in a war. A moderate breakout of the ABM Treaty could substantially enhance the protection afforded by the Soviet passive defense plans. The DoD does not have an analysis showing the extent to which we could disrupt or curtail the war production capacity of the Soviet industrial base or, because of extensive stockpiling, the effect of reduced production on combat capability.

Air Defenses. The Soviet Union has an extensive air defense deployment which they have continued to modernize. It is believed that the U.S. bomber and cruise missile programs are keeping up with the improvements in Soviet air defenses. The air launched cruise missile being deployed and the new advanced cruise missile in development will maintain our ability to penetrate to fixed targets. For assets which the Soviets protect by mobility or reconstitution (theater nuclear missiles, reload ICBMs, general purpose forces, and elements of leadership and C^3), air defenses pose a more difficult problem because such targets cannot be addressed with ballistic or cruise missiles. The B-1B which has better penetration capability than the B-52 and, in the next decade, the Advanced Technology Bomber, have the potential to restore the deterrent strength lost to the Soviet mobility/reconstitution protection.

Soviet Offensive Forces versus U.S. Defenses. With regard to your request for a corresponding analysis of Soviet strategic offensive forces and their capability to place our target base at risk the following lists each major category of US targets and details the changing trends in their capability to attack it. Soviet priority targets are believed to be nuclear command, control and communications and politico-administration centers, nuclear delivery systems and weapons, general purpose forces, war supporting industry and air defenses. The following lists each major category of targets and describes the trend in Soviet preemption capability.

Nuclear Command, Control and Communications and Politico-Administrative Centers. For the past decade the Soviet Union's growing ability to attack U.S. C^3 facilities far outpaced efforts on the U.S. side to maintain survivability and connectivity. Redressal of this serious weakness in our deterrent posture is the first priority effort of President Reagan's strategic modernization program. The C^3 improvement package consists of a number of programs each responding to specific vulnerabilities.

Nuclear Delivery Systems and Weapons. Since the signing of the SALT I accords in 1972, growth in Soviet ability to attack U.S. ICBMs has far outpaced our efforts to protect them. Despite a program which substantially hardened the Minuteman silos, the Soviet Union has increased their damage expectancy significantly. The multiple protective shelter basing concept was not built because the Soviets could have added warheads faster and at less cost than the U.S. could have built shelters. Superhard silos would have been effective but were rejected by the Congress. The small mobile ICBM now in development would improve survivability if the Congress proves willing to fund such a deployment despite a cost much higher than that of the Peacekeeper system.

The Trident submarine program offers much quieter operation than its predecessor which, with the increasing sea room to be provided by the longer range missiles, will keep ahead of Soviet ASW efforts.

The B-1B with its better base escape capabilities will improve bomber force prelaunch survivability relative to that of the B-52 force. The current Soviet deployment of long range sub-launched cruise missiles creates a risk of undetected attack; however, we are examining ways to counter this threat with existing systems.

General Purpose Forces. General purpose forces in the US (tactical air forces, military airlift, logistical support facilities, Army posts and naval facilities) are soft, vulnerable, and ill-prepared to deal with a Soviet attack. The Soviets could inflict great damage on our general purpose forces with very few weapons due to the fact that we have centralized and colocated many functions for efficiency and economy. Additionally, there are currently no plans for dispersal and no passive defense measures for protection of equipment or personnel.

War Supporting Industry. Industrial targets in the US are soft and vulnerable to a Soviet strike.

Air Defense. Currently, the US has very few air defense forces (5 squadrons of active interceptors and 10 squadrons of Air National Guard interceptors), which could be heavily damaged by a Soviet preemptive strike.

In summary, the Soviet Union has continued a very heavily-funded program in all aspects of strategic defense which has resulted in a substantial imbalance in the degree of vulnerability of the two nations and, as implied by the question, has the effect of worsening the imbalance in strategic offensive forces.

Strategic Air Defense Reductions

QUESTION: You state that "[i]n the 70's the U.S. essentially eliminated strategic defense procurement and forces." In retrospect, do you believe this was a wise decision, knowing what we now know about Soviet bomber and cruise missile development?

ANSWER: The significant reductions of strategic air defenses, an area of joint U.S.-Canadian responsibility under NORAD, was premised on a wide-spread belief that the Soviet Union was not interested in its long-range bombers and that in fact the Soviet strategic bomber force would wither away with the passage of time. These assumptions have not stood the test of time. Thus, the Soviet Union not only continued to maintain its strategic bomber force but also has enhanced it over time. The T-95 Bear bombers are now complimented by a significant force of Backfire bombers which are capable of intercontinental missions against the United States. Similarly, the Soviets are developing a long-range ALCM, a T-95 Bear ALCM carrying variant, and yet another new intercontinental bomber, the Blackjack, which is similar to, but larger than, the B-1B. These indications strongly suggest that the Soviet Union has retained an interest in developing and deploying a modern and effective strategic bomber force.

For these reasons, it is important to continue with the air defense component of the President's strategic modernization program including the deployment of OTH-B and modern line-of-sight radars and the replacement of aging F-106 aircraft with F-15 fighters. These steps will improve our tactical warning and attack assessment capabilities and thus contribute to the strengthening of deterrence by making it additionally unattractive for the Soviets to employ strategic bombers against North America.

OFFENSE VS DEFENSE

QUESTION: While I urgently desire a fair and verifiable treaty with the Soviet Union limiting and reducing nuclear weapons, there is a chance we will not be able to negotiate such an agreement. In the event that negotiations do not succeed and competition in arms proceeds on an unlimited basis, we will be faced with a critical choice in the next few years. This choice will be whether to proceed with the construction and deployment of an active strategic defense or to continue to invest funds in the acquisition of additional strategic offensive systems. As a prudent manager, you must already be thinking of how you would make such a decision if it were to become necessary. Can you give us some indication of the factors you would examine in such a situation and how they weigh in your calculations?

ANSWER: First, we do not accept the premise that a choice between offensive and defensive system can or must be made. We have concluded that modernization of our strategic offensive forces must be undertaken to address near-term deficiencies in our deterrent posture, deficiencies that cannot be remedied soon enough by defenses. We feel that the proper way for the United States to analyze its strategic investments is to consider how strategic defenses, and modernized strategic offensive forces would each contribute to our national security, and, in particular, how they would complement each other. Based on the President's direction, the DoD is assessing the ability of defense technologies to support a shift toward a greater role for defenses in our strategic posture. But there is no way to eliminate requirements for offensive forces even if the decision is made to move forward with defense procurements.

QUESTION: When do you expect the Strategic Defense Initiative to provide you with enough hard data to be able to draw reasoned conclusions regarding military operational effectiveness of proposed systems and cost-effectiveness of these systems as opposed to offensive systems?

ANSWER: "Reasoned conclusions" are already being developed, based on educated estimates of operational and cost effectiveness of ballistic missile defenses and air defenses. Initial results suggest that strategic defenses may not only be affordable but could be cost effective relative to the offenses they face, by a factor of two or more. These initial estimates are not based on directed-energy technologies, which are not yet mature enough to support cost analyses.

The SDI investigations over the next few years will establish proof that the "reasoned conclusions" of 1984 are valid. This could lead to a fully informed decision regarding systems development of strategic defenses by the early 1990s, to be based on the "hard data" to which you referred.

EXPANDING SOVIET SPACE PROGRAM

Question: In your testimony, you describe an expanding Soviet space program with a very heavy military emphasis. Do you have indications that the Soviet Union is trying to develop an integrated space combat capability, employing both manned and unmanned platforms and a sophisticated command, control, communications and intelligence support network?

Answer: Yes. [Deleted].

DIRECTED ENERGY WEAPONS

Question: Do you believe the Soviet Union is focusing on directed energy weapons with antisatellite and antiballistic missile missions in mind?

Answer: We have[deleted]evidence that the Soviets are developing ground based laser weapons for [deleted] ABM defense. There is (d) evidence that the Soviets are developing both laser and particle beam weapons system components for use in space. [Deleted].

STRATEGIC DEFENSE IN SPACE

Question: Do you believe they are working to achieve the ability to deploy an active strategic defense in space before the end of this century?

Answer: While we believe that the Soviets are developing space based strategic defense weapons, we do not know their deployment schedule. [Deleted.]

SOVIET WAR FIGHTING CAPABILITY

QUESTION: Looking at the totality of Soviet offensive forces in being and in development, Soviet C^3I, Soviet active and passive defenses, and the Soviet space program, do you believe the Soviets have attained, or will attain within the foreseeable future, a nuclear war fighting capability, as opposed to a deterrent assured destruction capability? How much difference will our own efforts to improve our military capabilities make to the effectiveness of their efforts?

ANSWER: There is no question the Soviets have developed and are continuing to expand their capabilities for nuclear war fighting. The Soviets believe that if a nuclear war happens, they intend to be in a position to survive and win. The operations of their defensive and offensive forces are closely coupled in that offensive strikes would reduce the burden for their defensive forces. The Soviets have massive development and deployment efforts underway on all strategic offensive and defensive areas including space. The scope, magnitude and pace of these efforts leads us to the inescapable conclusion that the Soviets are pursuing a nuclear war fighting capability to achieve their objective of strategic superiority.

Unless the United States continues to upgrade its nuclear forces through the President's strategic modernization program and initiates the technology involved in the Strategic Defense Initiatives program, we could face a serious deterioration in our deterrent capabilities against the Soviet threat. The US can ill afford to fundamentally change the US-USSR strategic nuclear relationship in these perilous times. Our efforts do not seek to replace proven policies for maintaining peace, but to strengthen their effectiveness in the face of a growing Soviet threat.

Joint Antitactical Missle (JATM)

Question: Analyses of our NATO strategy indicate serious vulnerabilities to already deployed and soon to be deployed Soviet intermediate and short range ballistic missile systems. Please describe the Department's anti-tactical missile effort and explain its importance.

Answer: The Joint Anti-Tactical Missile (JATM) program has been initiated based upon the growing need to counter the increasingly sophisticated tactical missile threat. Army is Executive Service for the joint program with Navy and Air Force participation. The program will be executed in two concurrent phases directed toward near-term and long-term solutions. The near-term program combines threat assessment, development of active and passive ATM defense requirements, and evaluation of DoD air defense systems to determine potential ATM capability. The evaluation will be followed by product improvemnt of selected Army systems [deleted] to provide the first step in a phased response to the tactical missile threat. Current and emerging air defense systems have an inherent capability against portions of the tactical missile threat spectrum. Product improvements to these systems may provide the fastest means to counter a portion of the threat [deleted] [deleted]. Long-term options will include a complete joint systems approach to define the overall concept for countering the total tactical missile threat. [Deleted.] Initial long-term concepts will include examination of: [Deleted.]

SOVIET DEVELOPMENTS IN MUNITIONS

Question: Please describe Soviet developments in chemical munitions, cluster munitions, and smart munitions as they may be related to their SS-20, SS-21, SS-22, SS-23 missiles, and their new battlefield multiple launch rocket system.

Answer: [Deleted.]

Weapons Systems with Collective Protection

Question: Please provide the Committee a list of all U.S. weapons systems now in production or scheduled for production within the period of this year's Five Year Defense Plan which provide collective protection for their crews for operation in an NBC environmenmt.

Answer: The following U.S. weapons systems are now in production or scheduled for production and/or modification within the period of this year's Five Year Defense Plan and will be provided collective protection for operation in a NBC environment. This collective protection may be in the form of either a positive overpressure system, ventilated face piece system, or a combination or hybrid system.

Army
M1E1 Abrams Tank
Multiple Launched Rocket System (MLRS)
M2/M3 Bradley Fighting Vehicle System
Sgt York Air Defense Gun
Field Artillery Ammunition Support Vehicle (FAASV)
M88A1 Recovery Vehicle
M109 Series SP 155mm Howitzer
Improved TOW Vehicle (modification)
Fire Support Vehicle (FIST) (modification)
Patriot
Pershing II
HAWK (modification)
Chaparral (modification)

Navy
DDG 51 -- Guided Missile Destroyer
LHD 1 -- Amphibious Assault Ship
AOE 6 -- Ammunition And Oiler Ship
AE 36 -- Ammunition Ship

Other ship classes such as CG-47, LSD-41, LPD-4, and CV71 are being assessed by the Navy's Ship Characteristics and Improvement Board (SCIB) to determine feasibility, affordability, and requirements for Collective Protection Systems (CPS). If approved for CPS, ships of these classes would also enter production within the period of this year's Five Year Defense Plan.

Marine Corps
M1E1 Tank
Light Armored Vehicle
Marine Corps Expeditionary Shelter System
M109 Self Propelled Howitzer (Product Improvement Program)

Air Force
Ground Launched Cruise Missile Launch Control Center.

In addition to these weapons systems, Collective Protection is also being sought for Fixed Installations and Headquarters, and Command, Control, and Communication equipment.

WEAPONS IN NBC ENVIRONMENT

Question: Please provide the Committee a list of all Soviet weapons systems now in production or which you believe will go into production within the next five years which provide collective protection for their crews for operation in an NBC environment.

Answer: With regard to Soviet Ground Systems, virtually all combat vehicles with enclosed crew space that have been constructed since 1972 have provisions for providing filtered air to the occupants. In addition, many older systems originally equipped for radioactive fall out protection have been upgraded to provide protection against CW/BW agents. This includes tanks, the BMP and BMD amphibious combat vehicles, BTR-70 personnel carrriers, and the BRDM amphibious reconnaissance vehicles. [Deleted.]

Sustaining Operations In a Chemical Environment

Question: Focusing on our equipment and installations in NATO Europe, do you believe we are adequately prepared to operate for a sustained period of time in an environment characterized by widespread and massive Warsaw Pact employment of lethal chemical agents?

Answer: It should be recognized that the impact of a Soviet chemical attack can be reduced by defensive capabilities, but it can never be negated. This is especially true when the attack is prolonged or widespread. The only realistic hope of avoiding degradation from a chemical attack is to deter such an attack through a credible chemical retaliatory capability which places the potential initiator at risk of similar degradation.

If such an attack were to occur, our Army front line forces are perhaps the best prepared. Nevertheless, there are severe problems in lack of collective protection facilities for command and control, and for rest and relief, as well as problems in detecting agents to allow reducing individual protective posture necessary to reduce degradation in mission accomplishment.

The logistic facilities supporting our forces are not well prepared for operating in a chemical environment. Chemical contamination of POMCUS sites and airfields will seriously impact our ability to reinforce, particularly if we were not mobilized before the attack. There is a serious lack of collective protection and decontamination capability at these sites, as well as a lack of individul protection for civilian airport crews and Civil Reserve Air Fleet crews.

Our tactical airfields have the capability to survive a chemical attack and fight for only [deleted]. Collective protection remains the most critical near-term requirement to extend the capability to sustain combat operations from contaminated air bases. Improvements in detection and warning capabilities are also needed to reduce the degradation imposed by chemical attack.

In general. overseas Naval shore facilities have a [deleted] in an environment chemically contaminated to the massive level that the Soviets are capable of producing. This is due to the degraded capabilities experienced when working in protective equipment as well as shortfalls in such equipment. The impact of a massive Soviet attack employing lethal chemical agents on the Navy's ability to accomplish its military missions at Europeran facilities is also scenario dependent. It is a function of the base attacked, the mission being performed, the chemical agents and concentrations employed, and frequency of re-attacks as well as the environment. Under most conditions, the Navy's overall abilities to conduct military operations in support of NATO would be degraded. The degradation would be due in part to degraded command, control, communications and intelligence capabilities (C^3I), reduce support facilities and lost of rapid access to in theater supplies and repair facilities.

Protective Equipment for Civilians

Question: Do you believe the Department has taken adequate steps to provide chemical protective masks and suits to U.S. and host nation civilian employees and U.S. dependents respectively working or living on or near U.S. facilities in NATO Europe which are high priority Soviet chemical targets, in the event these employees and dependents cannot be evacuated?

Answer: The Services are in the process of improving the status of individual and collective protection for U.S. and host nation civilian employees. However, no plans exist to provide such protection to nonemployed dependents, who are instead scheduled for evacuation from Europe in the event of an emergency.

The US Army has plans to provide chemical protective clothing to mission essential DA civilians and local national personnel employed by the US in Europe, so that they can operate in a CW environment to support our armed forces. Currently, Europe has sufficient chemical protective clothing on hand to support most [deleted] of these type civilian personnel, and plans are to complete this requirement by [deleted]. Since these mission essential civilains are required to perform support functions such as ammunition and munition handling, issue and control of prepositioned materiel and sustaining supplies, transportation of materiel, and maintenance of materiel, they must be protected to support our forces. The local military commander makes the determination as to which jobs are mission essential to support combat forces, and therefore which civilian and local national employees will receive chemical protective clothing and masks.

Department of Air Force civilians and host-nation civilian employees have protective clothing, are trained in protective measures, and participate in chemical defense exercises. Collective protection systems are being requested to protect these personnel during prolonged periods of contamination.

Priorities are established by the Navy to focus efforts so as to most rapidly improve its combat posture in a CW environment-- [deleted]. The Navy capability to continue operations from a chemically contaminated shore facility will improve as increased and improved CBR protective equipment is fielded in [deleted]. Improved individual and collective protective equipment will be first provided to military and civilian personnel essential to carrying out the military mission of the facility.

NATO CW MEDICAL CAPABILITY

Question: What is the current estimated capability of our military medical structure in NATO Europe to handle chemical casualties if a surprise Warsaw Pact attack prevents REFORGER from being executed? If REFORGER is fully successful?

Answer: Although execution of REFORGER would provide some additional medical assets to handle a mass casualty situation, our forces would be extremely vulnerable to a chemical strike under any circumstance. Approximately 20% of the chemical casualties could be treated, but more importantly the complications caused by use of chemical weapons would seriously hamper treatment of any casualty. The requirement to decontaminate even non-chemical casualties increases manpower needs dramatically. The necessity to conduct treatment in clean areas could increase transportation requirements many fold. Again execution of REFORGER would somewhat alleviate these shortfalls but in the absence of a complete and verifiable weapons ban, deterrence is the best way to prevent the mass casualty situation from occurring.

NATO CW Medical Improvements

Question: If the United States does not proceed to acquire a credible chemical deterrent capability, what steps would be necessary to provide our medical services in NATO Europe with the ability to care for the number of chemical casualties we would expect from a widespread and massive Soviet use of chemical weapons against our forces in the context of a Warsaw Pact attack on NATO?

Answer: In the absence of a verifiable chemical weapons ban, a credible deterrent must be maintained to prevent mass casualty situations. With the Soviet capability to strike throughout the depth of the battle field, even medical treatment facilities in the rear areas would be vulnerable to chemical attack, either directly or as a result of the downwind hazard. Contamination of rear areas would also deny speedy evacuation routes as well as suitable areas for placement of medical facilities.

The capability to treat chemical casualties as well as conventional wounds is complicated by the necessity to decontaiminate all those who were in the contaminated environment. This, in itself is manpower intensive. Hands on care is impossible when both the doctor and patient are in protective equipment. The normally simply act of monitoring vital signs is further complicated, if not made impossible. A collective protective system with adequate entry and exit devices for use in rear area hospitals is not available. Chemical prophylaxis and therapy as well as resuscitation equipment for evacuation aircraft and ambulances is lacking.

Continued support by the Congress, active participation by the pharmaceutical industry and scientific community are required to solve these problems. Even then, short term solutions are not expected. The ability of our research and development agencies to resolve the outstanding problems and the acquisition of the material necessary to provide medical treatment and shelter in a chemical environment would be major factors in improving the survival rate of all casualties in the chemical/conventional battlefield.

STRATEGIC DEFENSE INITIATIVE

Question: In the so-called Fletcher Commission report on active strategic defense, the issue of the ability of the Soviet Union to harden its ICBM's and SLBM's against laser radiation was considered. Please describe what steps the Soviet Union would have to undertake to harden its present generation of ICBM's and SLBM's against laser radiation such as that generated by high energy chemical lasers, and discuss the impact this hardening requirement would have on their research and development effort, their manufacturing process, and the military capability of their

ICBM's and SLBM's, including possible range, throw weight and accuracy penalties. Also provide your best estimate of the time it would take them to harden these systems and the level of resources they would have to divert from other efforts to devote to hardening.

Answer: Any specific answer to the questions posed would be mostly speculation; therefore, no specific answer can be given. Laser damage effects and target vulnerability to laser weapons are poorly understood today. The complexities of laser beam-target interaction, damage, and target response to damage are great, and predictions based on theoretical extrapolation from experimental conditions which are far from actual conditions expected in combat are difficult and uncertain. In the area of thermal kill, past efforts to extrapolate data have been unsuccessful. Our understanding of the basic scientific and engineering process is embryonic, and we have repeatedly been surprised as unanticipated reactions have emerged when new regions of the parameter space were examined in actual experiments. Most of the damage and vulnerability tests conducted to date have been conducted on static materials (coupons) using low and moderate power lasers focused to small (tiny) spot sizes in order to provide high irradiance levels. What little testing has been done with powerful lasers and large spot sizes has not been against targets simulating ballistic missiles in any realistic fashion.

We have no basis for estimating Soviet capabilities in hardening their missiles, beyond a general recognition that they are technologically very capable. An estimate could only be made now by mirror-imaging potential U.S. responses; that is, by analyzing what we would do if we were equipped with Soviet type ballistic missiles.

Based on the limited experimentation to date, we believe that current boosters in the U.S. and the Soviet inventory have a hardness in the range of (d) joules per square centimeter. That means that a laser system would have to be bright enough to deposit (d) joules of laser energy per square centimeter over an area of perhaps a few hundred to several hundred square centimeters in order to destroy it. (Brightness is a function of both laser power and laser beam divergence. The latter is a function of both beam quality and the diameter of the focusing optic.) Although there are significant uncertainites in this value, we believe that the Soviet Union could deploy, in the 1990's, a system of lasers which might be effective against current boosters. If these lasers operated at mid-infrared wavelengths, we might expect them to have performance parameters of (d) megawatts of power and a (d) meter diameter focusing mirror. [Deleted.] Methods have been proposed that might be able to make boosters as hard as (d) joules per square centimeter by the late 1990's; however, the implementation of the hardening would reduce missile payload. A more capable laser weapon system would be needed to effectively counter a force of such hardened ICBM's. We do not believe that the Soviets could deploy such laser weapons, which at mid-infrared operating wavelengths would require performance parameters greater than [deleted] megawatts and a (d) meter diameter focusing mirror, unitl after the year 2000. There are also proposals for ultimately hardening boosters to [deleted] joules per square centimeter; however, there is significant technical uncertainty with regard to performance penalties on the ICBM. Moreover, there are knowledgable individuals who believe that there is no way to attain this hardness level.

For these reasons, one of the highest priority efforts in the Strategic Defense Initiative is lethality testing of directed energy weapons against targets incorporating hardening countermeasures to these weapons. The purpose of this effort is to develop sound answers to the questions posed.

Question: Please discuss with specificity the laser energy levels you believe are necessary to destroy current generation Soviet ICBM's and SLBM's and explain how these energy levels were derived.

Answer: We believe that current boosters in the Soviet inventory have a hardness level of about (d) joules/cm^2. This is based upon comprehensive testing under the most realistic conditions available using U.S. lasers. An early goal for the SDI will be the construction of realistic test facilities to enable a full range of lethality assessments of various laser candidates and to determine the vulnerability of various boosters to these systems.

DEFENSE INTEGRATION

Question: Please explain your concept of how a deployed active strategic defense against ICBM's and SLBM's would be integrated with a defense against an air breathing threat including supersonic bombers and "stealthy" cruise missiles, addressing both NORAD and a future joint Space Command.

Answer: A defense against ICBMs and SLBMs would be a logical complement to a defense against the air breathing threat. However, neither system has been defined as yet. Such a defense would contribute to a defense against supersonic bombers and cruise missiles in at least three ways:

1. Provide protection of the air defense elements from ballistic missile attack.
2. Provide surveillance and tracking of high altitude supersonic threats.
3. Possibly support the intercept of supersonic threats.

Since the SDI is a technology development program, it is premature to discuss operational considerations involving NORAD and future joint Space Command.

US DETERRENT POSTURE

QUESTION: The Organization of the Joint Chiefs of Staff, in their publication The Military Posture of the United States, FY1985, compares the planned US starategic modernization effort ". . . with a Soviet force that reflects US analyses of achievable Soviet production and development levels and, in some cases, more technically advanced systems. In this comparison, all static force trends toward Soviet advantage continue beyond the 1980s. The development of modernized US systems does not halt the downward slide until the early 1990s. Only when TRIDENT II SLBM, small ICBM, and the ATB are deployed is there a trend reversal of any measure of capability." If this very plausible situation should develop, do you believe our present strategic modernization program will be adequate to sustain a credible US strategic deterrent?

ANSWER: Yes, providing we continue the program proposed by President Reagan in October, 1981. This is because the unique characteristics of the independent and separate components that make up our strategic triad bolster deterrence by acting in concert to complicate Soviet attack planning, making it more difficult for the Soviet Union to plan and execute a successful attack on all three components while at the same time defending against their combined and complementary retaliatory efforts.

TREND REVERSAL

QUESTION: Referring to the quote in the previous question, the best the OJCS could say was that there would be ". . . a trend reversal . . . (in some) measure of capability." What measure(s) of capability would show a reversal, what impact would "trend reversal" have on military capability, and over what time period would the "trend reversal" and trailing change in military capability occur?

ANSWER: With the exception of warhead numbers, all the measures described in the JCS Posture statement halt their downward trend; however, these are static measures that can only highlight pre-attack relative offensive capabilities. The Soviets have significantly improved their warfighting capabilities by modernizing their support systems and strategic defensive forces, as well as their offensive forces. Thus, in spite of some trend reversal in static measures, Soviet strategic forces will remain effective because of their development of mobile and dispersed weapon systems as well as protected and dispersed sites for essential installations, forces, and personnel. These efforts work together to make their target base significantly less vulnerable to attack. Nevertheless, the improved US posture will strengthen deterrence because US forces would remain effective even if the Soviets were to attack. In addition, our efforts in upgrading our C^3 capabilities improve the credibility of our strategic deterrent as well.

PASSIVE DEFENSE MEASURES

QUESTION: What are your views on the utility of, the need for, and the nature and scope of passive strategic defensive measures for both military and civilian personnel and facilities in conjunction with the strategic defense initiative and the reconstruction of a continental defense against an air breathing threat?

ANSWER: All our studies have shown the value of passive strategic defensive measures; however, it is not an easy task to accomplish in the US because of the open nature of our society. Our efforts, which combine disaster relief and nuclear attack preparedness, do not provide for adequate support of our dispersed population or the protection of our war-supporting industry and its labor force. Civil defense of course, receives far more emphasis in the Soviet Union. The Soviets view civil defense as an integral part of their strategic posture and invest heavily in the protection of their key leadership, essential work force, critical economic facilities, and their general population.

With regard to air defense and its relation to the Strategic Defense Initiatives (SDI) program, we initiated an air defense study last fall as the result of a recommendation by the Fletcher study group. The air defense study was just completed and we are now working to develop specific program proposals to counter the Soviet strategic bomber and cruise missile threat.

Nuclear Winter

Question: Please decribe the Department's views concerning the so-called "nuclear winter" hypothesis, set forth by R. P. Turco, O.B. Toon, T. P. Ackerman, J. B. Pollack and Carl Sagan in an article in Science magazine and in other publications?

Answer: The DoD has supported investigations of the environmental effects of nuclear exchanges for some time. Not because we seek to fight a nuclear war--which indeed we do not--but because these investigations usually furnish additional facts which strengthen our ability to prevent war. While some investigations have revealed the horrors of nuclear conflict, others have enabled us to enhance our deterrent in a military effectiveness sense. Both types of investigations are necessary to maintain an effective deterrent.

This scientific work and other defense related efforts support our policy of deterrence. The so-called TTAPS Study (named after its authors Turco, Toon, Ackerman, Pollack and Sagan) further illuminated one of the potential horrors of nuclear war. The resulting media coverage contributed to this awareness. Unfortunately, we cannot know how much the phenomena of the so-called "nuclear winter" has contributed to deterrence in the minds of Soviet leadership. But even without the climatic effects, a nuclear war would result in an unparalleled catastrophe for the whole world. As a result, we must continue to hope that the Soviet leaders will recognize the fact on which our long-standing US policy is built--nuclear war has no winners.

We are also convinced that it would be premature to draw conclusions and modify any US plans, programs or policies at this point based on the work that has been reported on "nuclear winter". The rationale for this conviction is that work on climatic efforts and their consequences is itself very preliminary. There are large uncertainties in both the physics and chemistry of the atmosphere. The scientific community will probably reduce these unknows as time passes, but large uncertainties will remain for some time. This kind of problem has a natural pace at which understanding develops; we are only at the beginning.

In the meantime, all of our efforts are directed at strengthening our deterrent posture and at vigorously pursuing a stabilizing arms reduction agreement with the Soviets in the START and INF negotiations.

Question: What efforts is the Department undertaking to determine the validity and accuracy of the "nuclear winter" hypothesis?

Answer: The DoD supports scientific research that will help everyone better understand the effects of nuclear weapons. The Defense Nuclear Agency has funded past studies on the global effects of nuclear warfare and is increasing funds for future efforts. This work is conducted in cooperation with expanded research efforts underway at the Livermore and Los Alamos National Laboratories. This Department is also supporting an interagency group chaired by the National Oceanic and Atmospheric Administration in an effort to integrate a national research program.

Question: If the "nuclear winter" hypothesis should be supported by additional research, what impact do you foresee it having on the Department's strategic systems research, development and acquisition plans?

Answer: At this time the uncertainty associated with the threshold for "nuclear winter" is too great to make any changes to our procurement program or to modify the US deterrence policy. Any future response must depend on the actual threshold (if any) for the "nuclear winter" to occur. In the meantime US policy will continue to be directed at the prevention of nuclear war.

Nuclear Winter and the Strategic Defense Initiative

Question: In your view, if the "nuclear winter" hypothesis is ultimately accepted as scientifically valid, would it increase or decrease the utility of a space-based active strategic defense, assuming the acceptance of the hypothesis did not, for whatever reasons, result in the successful conclusion of strategic arms reduction agreements?

Answer: The Presidents strategic defense initiative offers the hope of rendering nuclear missiles impotent. It complements rather then substitutes for proposals for major reductions in nuclear weapons. The effects of a nuclear war would be devastating even if a "nuclear winter" were not created. The SDI offers the potential of decreasing even further chances of nuclear war and it therefore stands on its own merits. Moreover, in the unlikely event that nuclear weapons are used, due to accident or miscalculation, Ballistic Missile Defense can greatly reduce the number of nuclear detonations, thereby lessening the chances of triggering a "nuclear winter".

ELVs

QUESTION: Please explain the Department's views on the purchase of additional expendable space launch vehicles as contrasted to the procurement of additional shuttle orbiters or shuttle-derived vehicles.

ANSWER: Existing Defense space launch planning specifies that DoD will rely on four unique, manned orbiters for sole access to space for all national security space systems. DoD studies and other independent evaluations have concluded that this does not represent an assured, flexible and responsive access to space. While the DoD is fully committed to the STS, total reliance upon the STS for access to space in view of the technical and operational uncertainties, represents an unacceptable national security risk. A complementary system is necessary to provide high confidence access to space, particularly since the Shuttle will be the only launch vehicle for all U.S. space users. In addition, the limited number of unique, manned Shuttle vehicles renders them ill-suited and inappropriate for use in a high-risk environment. The solution to this problem must be affordable and effective and yet offer a high degree of requirement satisfaction, low technical risk, and reasonable schedule availability. Unmanned, expendable launch vehicles meet these criteria and satisfy DoD operational needs for a launch system which complements the STS and extends our ability to conduct launch operations further into the spectrum of conflict. These systems can provide unique and assured launch capabilities in peace, crisis and in conflict levels short of General Nuclear war. These vehicles are designed to be expendable, and the loss of a single vehicle affects only that one mission and would not degrade future common, national launch capabilities by the loss of a reuseable launch system.

With regard to additional orbiters, the DoD has continually stated that an operationl four orbiter fleet will satisfy our requirements. Therefore, there is no explicit DoD requirement for additional orbiters. The type of problems that would cause disruption in a four orbiter fleet would continue regardless of how many additional orbiters one has. The idea of a complementary system to STS is just that, one that would be useable if a shuttle fleet problem arose. The Defense Space Launch Strategy identifies the need for other DoD launch capabilities and directs that efforts be initiated to evaluate potential DoD launch requirements, such as the need for a heavy lift vehicle, and to take maximum advantage of prior investments in the U.S. launch vehicle technology base.

QUICK RESPONSE TO ORBIT

QUESTION: Please explain the Department's views on a requirement for a quick-response-to-orbit capability to replace inoperative or destroyed space platforms, in light of the growing Soviet ASAT capability and possible Soviet deployment of directed energy ASAT weapons.

ANSWER: The Department currently does not have an explicit requirement for a quick-response-to-orbit capability to replace inoperative or destroyed military space platforms. The DoD believes that a reconstitution strategy of on-orbit spares is more timely and cost effective than quick-response-to-orbit. Currently, the DoD is programming limited spares for selected, essential payloads consistent with the projected threat. On-orbit sparing does not eliminate the need for a launch-on-demand capability as opposed to a "quick-response-to-orbit." The DoD launch-on-demand strategy is intended to replace satellites which would be lost due to natural causes such as aging or degradation. This strategy is dependent on an assured launch capability.

REPLACEMENT ON-ORBIT SYSTEMS

QUESTION: Please explain the Department's views on the cost and the requirement to procure additional space systems so as to be able to quickly replace any on-orbit systems which may become inoperative or be destroyed due to hostile action.

ANSWER: The DoD has reviewed both on-orbit sparing and quick-response-to-orbit concepts and determined on-orbit sparing to be most cost effective for existing space capabilities. On-orbit sparing is sufficient to meet critical military payload requirements and does not require the development of both new launch systems and payloads. Further, it does not require the expense of maintaining dual systems: one which supports full military requirements and a second provides minimum essential capabilities.

SUBCOMMITTEE RECESS

Senator STEVENS. The subcommittee will be in recess subject to the call of the chair.

[Whereupon, at 11:55 a.m., Tuesday, March 13, the subcommittee was recessed, to reconvene at the call of the Chair].

LIST OF WITNESSES, COMMUNICATIONS, AND PREPARED STATEMENTS

Page

Cooper, Rear Adm. Daniel L., Director, Office of Budget and Reports and Director, Fiscal Management Division 357
  Prepared statement 443

Davis, Maj. Gen. Harold M., Jr., Director of the Army Budget, Office of Comptroller of the Army, Department of the Army 113
DeLauer, Hon. Dr. Richard D., Under Secretary of Defense for Research and Engineering 541
  Prepared statement 549

Gabriel, Gen. Charles A., Chief of Staff, U.S. Air Force 281
  Joint prepared statement 286

Kelley, Gen. P. X., Commandant of the Marine Corps 357
  Prepared statement 416, 419

Lehman, Hon. John, Secretary of the Navy 357
  Prepared statement 359

Marsh, Hon. John O., Jr., Secretary of the Army 1
  Joint prepared statement 5
  Prepared statement 110

Orr, Hon. Verne, Secretary of the Air Force 281
  Joint prepared statement 286

Spangrud, Maj. Gen. Truman, Director of Budget, Comptroller of the Air Force 281
Watkins, Adm. James D., Chief of Naval Operations 357
  Prepared statement 375, 380
Wickham, Gen. John A., Jr., Chief of Staff, U.S. Army 113
  Joint prepared statement 5
  Prepared statement 118

SUBJECT INDEX

Page
A-6 aircraft 505, 528, 535
Additional committee questions 149, 328, 507, 606
AEGIS combat system 490
Air Force:
    Aggressor force 330
    Airfield sizes 329
    Combat, rescue, and special operations missions 309
    Cost of moving allowances 290
    Europe, troop strength level in 320
    Grand Forks Air Base power supply contract 324
    Spare parts and management 339
Alternative fighter engine 283, 307
Andrews, Hon. Mark, U.S. Senator from North Dakota, questions submitted by 159, 520
Antiarmor systems 146
Arms control violations 318
Army:
    Calibration equipment, purchase of 167, 201, 208
    Family relationships, strengthening of 114
    Force deployment 108
    Force structure, chart on expansion of 104
    Intelligence specialist positions 271
    Lexington-Blue Grass Depot 276
    Light division initiative 116, 124, 126, 161, 166, 265, 278, 322
    Light side commitments 114, 122
    M16A2 rifle 248
    Maintenance costs, pie chart on 107
    Modernization program 113
    Overseas strengths 138
    Personnel in transit 263
    Readiness of 160
    Test category content, chart on 141
    Training and equipment 246, 147
    Violent crimes, progress in controlling 106
ASAT Treaty 314

B-1 aircraft 283, 298, 330, 331, 335, 352
Ballistic missile defense program 151, 156, 252
Bradley fighting vehicle 125, 161, 273
Budget requests (all Services) 1, 100, 281, 299, 357, 509, 541, 544
    Cuts in 133
    Priorities 131

C-5B aircraft 312, 316, 328
C-17 aircraft 312, 316, 328
Camouflage screening and support-equipment contract 130, 159
CAPSTONE Program 261
Central America, operations in 267
Chemical warfare 150, 154, 254, 346, 525
Chiles, Hon. Lawton, U.S. Senator from Florida, questions submitted by 265
Comparative tables on budget authority and outlays (all Services) 2, 3, 282
Conventional forces 545
Copperhead missile system 146

Page
D'Amato, Hon. Alfonse M., U.S. Senator from New York, questions submitted by ... 165, 340, 522, 617
DeConcini, Hon. Dennis, U.S. Senator from Arizona, questions submitted by ... 538
Division air defense (DIVAD) ... 125, 149, 611

E-6A aircraft ... 498
EF-111 aircraft ... 350
Encryption problems ... 319
Engine thrust concept ... 602
Expendable launch vehicles ... 340

F-4 aircraft ... 595
F-14 aircraft ... 512, 514
F-16 aircraft ... 603
F-20 fighter aircraft ... 329
F/A-18 aircraft ... 529
Force modernization ... 545, 581

Garn, Hon. Jake, U.S. Senator from Utah, questions submitted by ... 334
Germany, U.S. commitments in ... 136
Grenada:
  Cost of operation in ... 158
  Intelligence products ... 268
  Rangers performance in ... 100
Guard and Reserve forces:
  Chart on contributions by ... 105, 121
  Components modernization, chart on ... 117
  Operational efficiency ... 301
  Quality of ... 295
  Reliance on ... 121, 162
  Update equipment for ... 326, 480

HARM missile system ... 510
Harrier procurement ... 493
HH-60D/E helicopter ... 332
Honduras, funding for ... 138
  Big Pine exercise in ... 158
  Guard and Reserve activities in ... 296
Huddleston, Hon. Walter D., U.S. Senator from Kentucky, questions submitted by ... 267

Industrial base problem ... 301
Inouye, Hon. Daniel K., U.S. Senator from Hawaii, questions submitted by ... 535

Johnston, Hon. J. Bennett, U.S. Senator from Louisiana, questions submitted by ... 352, 536
Joint Chiefs of Staff, reorganization of ... 163
Joint Special Operations Agency ... 269, 294
JTACMS and JSTARS systems ... 591
JTIDS ... 350, 529
JVX program ... 489, 499

Kasten, Hon. Robert W., Jr., U.S. Senator from Wisconsin, questions submitted by ... 161, 338

LANTIRN system ... 302
Layered missile defense ... 586
Light armored vehicle (LAV) program ... 513, 583

M-1 tank:
  Capability of ... 130
  Development of ... 131, 155
  Engine second sourcing ... 138, 275
  POMCUS units, use for ... 126
  Production goals ... 132
  States of ... 113, 275
  M-60 tank ... 127
Management initiatives ... 481

Page
Manned space station 342
McClure, Hon. James A., U.S. Senator from Idaho, questions submitted by 155, 335
Military housing allowances 142
Military police force structure 260
Minuteman missile Stage III motor 334
MK 12 IFF system 303
Munitions counsel 585
MX missile production 314, 315, 603
  Peacekeeper program 353
NATO:
  Air defense 593, 610
  Cost of U.S. involvement in 297, 321
  Doctrine 258
  Emerging technologies 587, 589
  Strategic commitments to 135
  Successful results of 137
Navy and Marine Corps:
  Ballistic missile submarine 502
  Base construction program 519
  Battleship reactivation 507
  Carrier battle cruise 486
  Carrier ASW helicopter 516
  CH-53E squadrons 518
  Civilian/military personnel 483
  DDG *Arleigh Burke* class destroyer 492, 531
  DDG-51 504
  Iowa class battleship 492
  Lebanon, naval shelling of 488
  Light antiarmor program 497
  MCM program 501
  Mine countermeasure effort 501
  Naval strategy 480
  Personnel readiness 478, 482, 485, 487, 520
  Posture 477
  Puerto Rico, military in 484
  Shipbuilding program 479
  Ship procurement program 491
  Shipyard mobilization base 500
  600-ship Navy 478
Next generation trainer 311
Nuclear forces 545

Other procurement account 306
Pay and incentives:
  Accrual system 156
  Bonus payments 144
  Military versus civilian 139
Permanent change of station policy 144
POMCUS, status of 135, 137
Proxmire, Hon. William, U.S. Senator from Wisconsin, questions submitted by 263

Quality of life 284

Rapier missile system 593
Recruitment and reenlistment:
  Air Force accomplishments 283
  Army successes in 145, 271
  Goals 264
  Navy increases in 530
Retirement 284

Security assistance to Latin America, U.S. and Soviet investment in 103
Small ICBM 306
Soviet Union:
  ABM systems 155, 523
  Adventurism in Western Hemisphere by 102
  Defense budget of 165

Page

Soviet Union—Continued
  Force buildup 548
  Operational maneuver groups in NATO 260
  Space capabilities 343
Space laser program 599
Spare parts 284, 309
Stennis, Hon. John C., U.S. Senator from Mississippi, questions submitted by .. 530
Stinger missile system 147
Strategic airlift and sealift shortfalls 115, 164
Strategic defense initiative 251, 346, 586, 589, 598, 600, 607

T-45B program 498
Technology transfer 546, 607
Terrorism, progress in combatting 249, 269
Tomahawk missile system 510, 591

Warranties 128, 129, 323, 493, 495, 542
Weapons platforms versus munitions 304
Weicker, Hon. Lowell, P., U.S. Senator from Connecticut, questions submitted by 155, 332, 514
Worldwide insurgencies, chart on 101